NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

BRIDGING THE GAP: TO WHAT EXTENT DO SOCIOECONOMIC BARRIERS IMPEDE RESPONSE TO EMERGING PUBLIC HEALTH THREATS?

by

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March 2017

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REPORT DOCUMENTATION PAGE			*Form Approved OMB No. 0704-0188*
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.			
1. AGENCY USE ONLY ***(Leave blank)***	**2. REPORT DATE** March 2017	**3. REPORT TYPE AND DATES COVERED** Master's thesis	
4. TITLE AND SUBTITLE BRIDGING THE GAP: TO WHAT EXTENT DO SOCIOECONOMIC BARRIERS IMPEDE RESPONSE TO EMERGING PUBLIC HEALTH THREATS?			**5. FUNDING NUMBERS**
6. AUTHOR(S) Donald L. Neuert			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			**8. PERFORMING ORGANIZATION REPORT NUMBER**
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			**10. SPONSORING / MONITORING AGENCY REPORT NUMBER**
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government. IRB number ____N/A____.			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.			**12b. DISTRIBUTION CODE**

13. ABSTRACT (maximum 200 words)

It is crucial for public health emergency planners and responders to realize and account for socioeconomic barriers and the challenges they pose when faced with a bioterrorism, infectious disease, or other emerging public health threat impacting the homeland. The study design of this research incorporated two particular paradigms, investigative and predictive. The researcher found that social and economic factors account for nearly 40 percent of health outcomes in the United States. Public health and its response partners need to plan for emergencies using a "60/40" lens. He discovered that at least 40 percent of populations may not receive the critical health care they require in emergencies because of socioeconomic status or related factors. This thesis investigated the language, culture and historical trauma barriers—and affiliated challenges, such as fear and distrust—that exist throughout the country. Given these findings, this thesis provides both policy- and strategy-level recommendations to assist public health and healthcare practitioners in their efforts to "bridge the gap" that exists within and between community populations in the United States. Disciplines that consider implementing these recommendations will help minimize significant, and perhaps avoidable, consequences that follow health-related emergencies or varied disasters impacting the homeland.

14. SUBJECT TERMS public health, public health emergency preparedness, bioterrorism, public health threats, socioeconomic barriers, fear management, fear/distrust, SARS, social determinants of health (SDoH), language, culture, CLAS, historical trauma			**15. NUMBER OF PAGES** 115
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	**18. SECURITY CLASSIFICATION OF THIS PAGE** Unclassified	**19. SECURITY CLASSIFICATION OF ABSTRACT** Unclassified	**20. LIMITATION OF ABSTRACT** UU

NSN 7540-01-280-5500 Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

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BRIDGING THE GAP: TO WHAT EXTENT DO SOCIOECONOMIC BARRIERS IMPEDE RESPONSE TO EMERGING PUBLIC HEALTH THREATS?

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Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
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ABSTRACT

It is crucial for public health emergency planners and responders to realize and account for socioeconomic barriers and the challenges they pose when faced with a bioterrorism, infectious disease, or other emerging public health threat impacting the homeland. The study design of this research incorporated two particular paradigms, investigative and predictive. The researcher found that social and economic factors account for nearly 40 percent of health outcomes in the United States. Public health and its response partners need to plan for emergencies using a "60/40" lens. He discovered that at least 40 percent of populations may not receive the critical health care they require in emergencies because of socioeconomic status or related factors. This thesis investigated the language, culture and historical trauma barriers—and affiliated challenges, such as fear and distrust—that exist throughout the country. Given these findings, this thesis provides both policy- and strategy-level recommendations to assist public health and healthcare practitioners in their efforts to "bridge the gap" that exists within and between community populations in the United States. Disciplines that consider implementing these recommendations will help minimize significant, and perhaps avoidable, consequences that follow health-related emergencies or varied disasters impacting the homeland.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAR/IP	action report/improvement plan
AHA	American Heart Association
AIM	American Indian Movement
APA	American Psychological Association
BIA	Bureau of Indian Affairs
CBO	community-based organization
CDC	Centers for Disease Control and Prevention
CHC	Chinese Health Coalition
CLAS	culturally and linguistically appropriate services
CPR	cardiopulmonary resuscitation
CRI	Cities Readiness Initiative
DHHS	Department of Health and Human Services
DPH	Division of Public Health
DSLR	Division of State and Local Readiness
EOP	emergency operations plan
FBO	faith-based organization
FDA	Federal Drug Administration
GDTAM	Giger and Davidhizar Transcultural Assessment Model
HSDL	Homeland Security Digital Library
HSE	homeland security enterprise
HVA	hazard vulnerability assessment
IHS	Indian Health Service
LEP	limited English proficiency
MCM/ORR	Medical Countermeasure/Operational Readiness Review
MOU	memorandum of understanding
MSA	metropolitan statistical area
OMH	Office of Minority Health
PERRC	Preparedness and Emergency Response Research Center
PHEP	public health emergency preparedness
SAMHSA	Substance Abuse and Mental Health Services

SARS	severe acute respiratory syndrome
SDoH	social determinants of health
SES	socioeconomic status
SNS	strategic national stockpile
TJC	The Joint Commission
USPHS	United States Public Health Service
WHO	World Health Organization

EXECUTIVE SUMMARY

The basis for this thesis and research topic stems from certain local and state Public Health Emergency Preparedness grant activities—managed by the Centers for Disease Control and Prevention (CDC)—focused on jurisdictions' ability to dispense life-saving medications and medical supplies to 100 percent of an impacted population within 48 hours of a bioterrorism incident.[1] Managing the state emergency medical countermeasure program for many years, the researcher felt it was important to examine barriers that local and state public health practitioners face in their missions to provide emergency medications, healthcare, or other services as a result of widespread infectious disease outbreaks and bioterrorism incidents.

He questioned how it would be possible for health practitioners to reach entire impacted populations within 48 hours when socioeconomic barriers, fear, and distrust of government exist in communities. The purpose of the research was to understand better the extent of these barriers—the significance and relevancy of the barriers—and how they impede response to emerging health threats. Many socioeconomic barriers and affiliated challenges need to be considered but this research was based on three primary "pillars" associated to the social determinants of health, which are (1) language, (2) culture, and (3) historical trauma.[2] His findings centered around the barriers—along with contributing factors, such as fear and distrust of government—to understand better their connection or disconnection to health emergencies. The results gathered and data analyzed presented a much larger problem space than anticipated.

Before researching this topic, when considering the CDC's model of providing medications and healthcare to 100 percent of a population within 48 hours of a dire health emergency, the researcher predicted a more realistic percentage would be the ability to reach 80–90 percent of a population in that timeframe. After researching barriers across

[1] "Cities Readiness Initiative Strategic National Stockpile," accessed February 20, 2016, http://www.cdc.gov/phpr/stockpile/cri/index.htm.

[2] "Social Determinants of Health: Know What Affects Health," last updated October 13, 2016, http://www.cdc.gov/socialdeterminants/.

the United States that language, culture, and historical trauma present—along with fear and distrust of government—the percentage significantly dropped. It became more realistic that reaching 60 percent of community populations within the critical time period for emergency antibiotics to be effective is more accurately the baseline from which public health and healthcare practitioners should work. It became more and more apparent as he researched this subject matter that both the gaps—and the impacts that stem from these gaps—have been vastly underestimated in this nation's current operational and strategic planning and response practices.

This research is based on the argument that socioeconomic barriers have significant impacts in an event requiring emergency medication dispensing to 100 percent of a population in 48 hours. Before researching the event, the researcher had no idea that the gap to be bridged would be so expansive and far-reaching. Changes will not happen overnight, but with dedicated policy and strategy level efforts—what seem like daunting, impossible tasks—can be achieved and the socioeconomic gap can be bridged. The following recommendations aim to assist practitioners with these efforts.

A. RECOMMENDATIONS

1. Community Outreach

To help mitigate against differential rates of morbidity and mortality in future health emergencies, it is critical that the entire U.S. public, including specific subgroups, have access to credible, accessible, and meaningful information that enables them to make appropriate use of potentially lifesaving emergency medical countermeasures.

2. Building Trust through Community Resilience

Building community resilience to disasters is essential and is commonly described as "the ability to mitigate and rebound quickly."[3] Viewing preparedness through a community resilience lens provides a foundation to work from for improving community engagement and outreach efforts that will strengthen community relationships and

[3] Alonzo Plough et al., "Building Community Disaster Resilience: Perspectives from a Large Urban County Department of Public Health," *American Journal of Public Health* 103, no. 7 (2013): 1190–97, doi: 10.2105/AJPH.2013.301268.

improve both communication strategies and trust with entire populations across the homeland.

3. Using Appropriate "Whole Community" Risk Communications to Bridge the Gap

Effective risk communications serve as the basis emergency response missions to varied health emergencies.[4] The researcher has learned that emergency messaging needs to be developed in a "culturally appropriate manner" to ensure "whole community" populations adhere to emergency messaging and safety recommendations put forth by health and healthcare practitioners as a result of an emerging health threat.[5]

B. CONCLUSION

Efforts and emphasis placed on activities to "bridge the gap" will further reduce fear, distrust, and misperceptions of preferential treatment among populations. As a result, lower mobility and morality rates could be expected and the risk of rioting, civil unrest, and community divisiveness lessened across the homeland.

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[4] Plough et al., "Building Community Disaster Resilience: Perspectives from a Large Urban County Department of Public Health," *American Journal of Public Health*, 1190–97.

[5] Randy Rowel et al., *A Guide to Enhance Risk Communication among Low-Income Populations* (Baltimore, MD: Morgan State University School Community Health and Policy, Department of Behavior Health Sciences 2009), http://serve.mt.gov/wp-content/uploads/2010/10/A-Guide-to-Enhance-Risk-Communication-Among-Low-Income-Populations.pdf.

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ACKNOWLEDGMENTS

I would like to dedicate this thesis to my father, Don Neuert. Thank you for giving me the drive, the inspiration and the tools to succeed in life, Dad. I know you would have been proud of this achievement and I miss you. If for only one more cast into the stream ...

I would like to acknowledge and thank the Wisconsin Department of Health Services, specifically my coworkers, supervisors, and the executive leadership team in the Division of Public Health (DPH). Your unwavering support and encouragement throughout this program has been nothing short of amazing, and I am very proud to be a part of the incredibly talented and committed DPH team in Wisconsin!

I would also like to thank my advisor, Anke Richter, and second reader, Evelyn Cruz, for their extremely valuable insight, knowledge, and expertise with the subject matter written in this thesis. Thank you for joining me on this journey! I would also like to acknowledge and thank the entire Center for Homeland Defense and Security faculty members, especially Lauren Wollman, Carolyn Halladay, and Lynda Peters. Thank you for your contributions to this thesis and for the partnership, kindness, and support from the time the race began and all the way to the finish line.

And, of course to "1511," it has been an honor and a privilege in getting to know you all, and thank you for the dedicated, selfless, and essential public service you all provide to keep our families safe and secure from those who intend to harm us. I will miss you all very much, but it is encouraging to know that the bonds and friendships we have made with one another will remain long after we have graduated from the Naval Postgraduate School.

I would like to wholeheartedly thank my family for all their support. Whether it is in Washington, Oregon, Michigan, or Wisconsin, you have all been there for me with encouragement, smiles and hugs; I love you all.

Finally, to my beautiful and wonderful wife, Kelly, thank you for your love, support, and reassurance as I worked my way through the degree requirements. Thank

you for your advice and for your patience with me. Thank you for providing me suggestions as I would read and re-read to you course papers and thesis chapters for countless hours in the evenings and weekends! Thank you for your understanding as I missed family events, our trips “up North,” and date nights. Please know I am so appreciative of all you do and am thankful to be your husband. And to my precious and amazing daughter, Hannah, thank you for your support and love throughout this, too! I am so proud of you, and it is exciting to think about the future achievements, celebrations, and joys in life that await you!

I. INTRODUCTION

A frame for Homeland Security is…humanity.[1]

Following the attacks of September 11, 2001 (9/11), the Centers for Disease Control and Prevention (CDC), along with a host of federal partners, established programs to prepare, train and educate local, state, and federal public health and healthcare practitioners in emergency response. These efforts included assessing the public health workforce's abilities and targeted capabilities to respond to a wide-range of emergencies including a bioterrorism incident involving the release of aerosolized anthrax. The CDC developed a program in 2004 called the "Cities Readiness Initiative" (CRI). The CRI program is a federally funded effort to "prepare major U.S. cities and metropolitan areas to effectively respond to large scale public health emergencies by dispensing life-saving medications and medical supplies from the Strategic National Stockpile to their entire identified population within 48 hours of the decision to do so."[2] Although a wide-spread anthrax attack has not happened within the homeland, emergencies, such as H1N1 and Hurricane Katrina, have provided evidence that even after the significant amount of federal funding post-9/11; socioeconomic factors in emergent situations still pose major problems for the public health workforce and first responders. Many socioeconomic barriers need to be considered but the scope of this research is based on three primary "pillars" associated to the social determinants of health (SDoH), which are (1) language, (2) culture, and (3) historical trauma.[3]

The American Psychological Association (APA) describes socioeconomic status (SES) as the "social standing or class" of individuals or groups in a community.[4]

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[1] Anders Strindberg, "My place in the Homeland Security Enterprise" (lecture, Naval Postgraduate School, Center for Homeland Defense and Security, Monterey, California, October 5, 2016).

[2] "Cities Readiness Initiative Strategic National Stockpile," accessed February 20, 2016, http://www.cdc.gov/phpr/stockpile/cri/index.htm.

[3] "Social Determinants of Health: Know What Affects Health," last updated October 13, 2016, http://www.cdc.gov/socialdeterminants/.

[4] "Socioeconomic Status," accessed January 28, 2017, http://www.apa.org/topics/socioeconomic-status/index.aspx.

Researchers routinely examine the relationship between SES factors, such as low literacy, salary and employment history, and the inequalities that exist for populations experiencing these challenges in their lives.[5] These determinants are important to understand and take into account as evidence supports that these factors contribute to higher morbidity and mortality rates in disasters.[6] Policy makers need to address and account for a host of SES factors to reduce the negative outcomes that affect the health of entire populations across the homeland.[7] This thesis addresses certain socioeconomic gaps that exist between populations and discusses the reality that SES and SDoH impede response to emergent health events impacting the homeland.

Many of these barriers are culturally interwoven, rather than isolated, increasing the challenges for responders faced with serving entire populations. According to the County Health Rankings report, social and economic factors account for 40 percent of health outcomes.[8] Public health practitioners and their response partners need to plan for emergencies using a "60/40" lens. Research supports at least 40 percent of populations may not receive the care they require because of these and other inherent socioeconomic barriers.[9]

The importance and relevance of this subject matter cannot be summarized any better than relaying the vision of the Wisconsin State Health Plan (Healthiest Wisconsin 2020), which is simply "everyone living better, longer."[10] The key word in this research, this thesis, and the Wisconsin State Health Plan, is "everyone."

If this nation does not get a better grasp on socioeconomic barriers before a major health emergency occurs—such as the release of aerosolized anthrax or an acute

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[5] "Socioeconomic Status."

[6] S. Leonard Syme, Bonnie Lefkowitz, and Barbara Kivimae Krimgold, "Incorporating Socioeconomic Factors into U.S. Health Policy: Addressing the Barriers," *Health Affairs* 21, no. 2 (March 1, 2002): 113–18, doi: 10.1377/hlthaff.21.2.113 PMID: 11900151.

[7] Ibid.

[8] "Our Approach," accessed May 14, 2016, http://www.countyhealthrankings.org/our-approach.

[9] Ibid.

[10] "Wisconsin State Health Plan—Healthiest Wisconsin 2020," August 28, 2014, https://www.dhs.wisconsin.gov/node/134/draft.

communicable disease outbreak—under-served, under-represented, populations will experience significantly worse health outcomes.[11] This scenario presents other consequences, such as social injustice. "One of the leading social injustices from one population to the next is access to healthcare or lack thereof. Whether it's due to socioeconomic circumstances, like poverty or income status, disadvantaged members of society simply do not have access to healthcare, which only worsens social injustice."[12] The platform from which public health is based is social justice and ensuring "what is best for all of us, not just a few of us."[13]

Researching the significance of these interwoven socioeconomic barriers—and their effects on the effective response to health emergencies—will lessen the consequences that a disaster, bioterrorism attack, or pandemic outbreak pose. This thesis includes recommendations for how public health and healthcare practitioners can increase outreach efforts within their specific, diverse populations to lessen the death rates in health emergencies impacting populations. It is critical that all response disciplines are aware of—and plan for—varied, jurisdictional-specific, socioeconomic barriers and the impacts, challenges, and consequences they present in responding to emergencies. This thesis explains and outlines the importance of the gaps these barriers pose and provide recommendations to close them to save more lives during emergent events.

A. RESEARCH QUESTION AND PROBLEM SPACE

The research question is: "Bridging the Gap: To what extent do socioeconomic barriers impede response to emerging health threats?" This thesis examines challenges that face health practitioners tasked with outreach to populations in need of medical countermeasures or healthcare due to a bioterrorism incident or infectious disease outbreak. The researcher argues that certain socioeconomic factors present significant challenges to responders working in health emergencies and can lead to such

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[11] "Social Justice and Public Health—Where They Intersect," accessed March 5, 2016, http://socialwork.une.edu/resources/news/social-justice-and-public-health-where-they-intersect/.

[12] Ibid.

[13] "Mission, Vision, and Values," accessed May 30, 2016, http://publichealth.uams.edu/about-coph/mission-vision-and-values/.

consequences as rioting (due to the perception of preferential treatment), community divisions, and higher mortality and morbidity rates. This research started with exploring the practicality of existing health policies and programs, such as the CDC's CRI program, focused on "dispensing life-saving medications and medical supplies from the Strategic National Stockpile to their entire identified population within 48 hours of the decision to do so."[14]

Can any health agency ensure that 100 percent of its population will receive medicine or medical attention within 48 hours of a bioterrorism emergency? How about a widely, quickly-spreading infectious disease? Will socioeconomic barriers, fear, or distrust of government prevent health practitioners and their partners in reaching entire populations in **any** severe health emergency? The researcher's answer is yes. This issue forms the problem space and the basis of his research and this thesis.

B. RESEARCH PLAN

1. Study Design and Research Paradigms

This thesis provides both analytics and strategies to assist public health practitioners and partners in closing socioeconomic gaps to help ensure all populations receive the critical healthcare needed in response to varied, future emergent health threats and disasters. The study design of this research incorporated two particular paradigms, investigative and predictive.

The researcher conducted research using the investigative paradigm approach to determine the relationships, connections, disconnections, and barriers involved that impede the rapid dispensing of emergency medications and critical healthcare—to entire populations—as the result of a widespread bioterrorism or other health emergency.

He also conducted research using a predictive paradigm approach. It was helpful in the forecasting of impacts to populations living in certain environments, in certain situations, and helped describe the consequences that socioeconomic barriers present during pandemics or other emergent health events.

[14] "Cities Readiness Initiative Strategic National Stockpile."

2. Literature Search Design and Results

In support of this thesis, literature searches contained the gathering of peer reviewed journal articles and governmental reports from 2001 through the present. Articles were obtained using various electronic databases including PubMed, and the Homeland Security Digital Library (HSDL). Additionally, the internet provided significant details via web searches using the isolated and combined terms that include but are not limited to: the CRI, socio-economic barriers, cultural barriers, fear, distrust, fear management, historical trauma, language barriers, public health, H1N1, Hurricane Katrina, the Tuskegee Study, forced sterilization, internment camps, trauma, violence, anti-government attitudes, the CDC, the World Health Organization (WHO), infectious disease, healthcare, emergency preparedness, bioterrorism, health equity, national culturally and linguistically appropriate services (CLAS) standards, severe acute respiratory syndrome (SARS), social determinants of health, and emergency response. Web-based resources were primarily used to explore socioeconomic barriers and their association to health emergencies.

Literature was selected for inclusion if it contained information regarding the socioeconomic factors in emergencies or generally how language, culture, and past, historical events impact present day emergency response priorities. Research was also collected if it was relevant to the public's perception or skepticism of government-managed health services, as well as social vulnerability and social justice and injustice associated to healthcare needs.

Research for this thesis topic area covered a plethora of content from reliable, trusted, peer-reviewed sources related to subject matter. As of result of this research, an estimated 350 credible sources were accessed, read, and saved. Many provided evidence of the "problem space" and are cited throughout the chapters of the thesis. References included at the end of this thesis list sources to assist future research projects by others looking to expand upon the topic areas of this thesis.

The literature reviewed reinforced the notion that practitioners need to more purposely address socioeconomic barriers, fear, and distrust in their communities to help

minimize the impacts of health emergencies. Past after action reports (AARs) and other incident-based publications support that socioeconomic barriers have and continue to present significant challenges to public health practitioners, such as those stemming from the response to the H1N1 outbreak in 2008 and 2009. SES factors include a variety of increased risks and vulnerabilities and susceptibilities (particularly to severe infectious disease). Another barrier to consider is the perception of inequality of services to community populations that contribute to increased anxiety, fear, distrust, and civil unrest across the homeland and all have and may continue to result in higher morbidity and mortality rates as a result of a health emergency.[15] The following section provides chapter titles and overviews of topic areas contained in this thesis that serve as a complement to Chapter 1: Introduction.

C. THESIS OUTLINE

Chapter II, Language Barriers: Chapter II examines the varied linguistic challenges that exist for planning and responders to consider when dealing with emergent events. Topic areas within the chapter include analysis of language barriers in major cities, as well as communication and outreach strategies to address limited English proficiency (LEP) populations in health emergencies.

Chapter III, Culture Barriers: Chapter III focuses on certain cultural barriers that exist within communities posing challenges to response missions in health emergencies. Topic areas include cultural competency—and their relationship to emergent situations—the Giger and Davidhizar Transcultural Assessment Model (GDTAM) and cultural barrier situations experienced during Hurricane Katrina.

Chapter IV, Historical Trauma: Chapter IV explores and describes how traumatic experiences of the past directly associate to future public health response outcomes. A particular focus is placed on Native American, African American, Asian American, and Puerto Rican historical situations and dynamics. Fear and distrust of government—that stem from historical trauma—are also described in this chapter.

[15] Sandra Crouse Quinn et al., "Racial Disparities in Exposure, Susceptibility, and Access to Health Care in the U.S. H1N1 Influenza Pandemic," *American Journal of Public Health* 101, no. 2 (February 2011): 285–93, doi: 10.2105/AJPH.2009.188029 PMID: 21164098 PMCID: PMC3020202.

Chapter V, SARS and Canada Case Study: Chapter V examines Canadian public health practitioner's SARS isolation and quarantine practices, with respect to socioeconomic factors. The chapter highlights broad legal and policy challenges facing the United States if a similar widespread infectious disease were to impact the homeland.

Chapter VI, Recommendations and Conclusion: Chapter VI provides recommendations to address socioeconomic barriers, fear, distrust, and similar challenges facing health practitioners faced with response to emerging health threats. A particular emphasis is placed on community outreach strategies—as well as fear management practices—to minimize impacts to community populations if bioterrorism events or widespread, highly-pathogenic infectious disease outbreaks were to occur in the homeland.

D. CONCLUSION

Language, culture, and historical trauma barriers create significant challenges—and pose unique consequences—to government-led health response missions. These barriers are problematic and must be accounted for to ensure communities receive the healthcare and assistance needed in emergencies. This thesis examines the language, culture, and historical trauma barriers—and affiliated challenges, such as fear and distrust—and provides policy and strategy level recommendations to assist practitioners in their efforts to bridge the gap that exists between community populations throughout the homeland. It also suggests and provides some starting points for affiliated research areas to assist future practitioners looking to further these efforts.

The next chapter examines language barriers that exist across the homeland and the relevance that language challenges have on the response to emerging health threats.

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II. LANGUAGE BARRIERS

A. INTRODUCTION

Since the attacks on 9/11, the mission of the public health and healthcare workforce has expanded to include planning and response activities related to bioterrorism emergencies impacting their communities. The mailing of anthrax-laced envelopes to media outlets and congressional offices led the CDC to found the CRI program. The CRI program was established to "assist jurisdictions in their planning for response to a large scale terrorist event by dispensing antibiotics to their entire identified population within 48 hours."[16] According to the CDC, quickly providing antibiotics to impacted populations can prevent anthrax from developing in people who "have been exposed but have not developed symptoms." State and local public health and healthcare emergency preparedness plans are centered on dispensing operations of these medications when considering an anthrax scenario.[17] The intent of this chapter is to analyze if language barriers pose a significant challenge in delivering emergency medications to entire populations in a short amount of time, and if so, provide recommendations to public health, healthcare, and their partners to ensure entire populations receive medications within 48 hours of an aerosolized anthrax attack. The information provided in this chapter will assist all emergency responders in their strategies to address linguistic challenges in rapidly-developing disasters to reduce lives lost in impacted communities.

B. LANGUAGE BARRIERS IN MAJOR CITIES

In emergency situations, communication breakdowns affecting populations that require help from caregivers can have dire consequences. Factors, such as language and cultural barriers among non-native speakers, cause comprehension difficulty that must be

16 "CDC Cities Readiness Initiative, Q&A," accessed October 29, 2015, http://www.bt.cdc.gov/cri/qa.asp.

17 "Prevention, Anthrax," accessed November 1, 2015, http://www.cdc.gov/anthrax/medical-care/prevention.html.

overcome.[18] Language barriers pose a challenge to any community but are especially critical in densely-populated areas. In emergencies, people with LEP are at increased risk. Communicating effectively before, during, and after health emergencies or other disasters can be challenging due to socioeconomic barriers, such as language, cultural, and historical trauma.[19]

In New York City, where an estimated 200 languages are spoken, half of New Yorkers speak a language other than English.[20] Likewise, Los Angeles is also highly ethnically diverse, with 224 languages spoken citywide, with less than 50 percent of the population speaking English as their first language. Besides Spanish, other languages common to the Los Angeles area include Korean, Filipino, Armenian, Chinese, and Persian.[21]

C. ADDRESSING THE LINGUISTIC BARRIER

In a response requiring notification to and engagement with 100 percent of the population, such as pandemic outbreaks or bioterrorism incidents, the public health workforce and their partners must be prepared to relay critical alerts, notification and action-needed messaging swiftly to their non-English or LEP-speaking populations. "Effective implementation of public health preparedness programs and policies will require compliance from all residents, including linguistically diverse populations. Preparedness strategies will need to recognize factors related to culture, language, literacy, and trust that are likely to play a major role in achieving their objectives."[22] This

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[18] Harvey Pressman, Andrea Pietrzyk, and Jenifer Schneider, *Overcoming Communication Barriers in Emergency Situations: Some Basic Tools* (Monterey, CA: Central Coast Children's Foundation, Inc., 2012), http://www.centralcoastchildrensfoundation.org/draft/wp-content/uploads/2012/03/Emergency-Communication-Resources.pdf.

[19] "Communicating with Limited English Proficiency Populations," accessed October 22, 2015, http://www.nwcphp.org/training/opportunities/webinars/communicating-with-limited-english-proficiency-populations.

[20] "Population," accessed October 22, 2015, http://www.nyc.gov/html/dcp/html/census/pop_facts.shtml.

[21] "Los Angeles—Speaking the Language," accessed September 26, 2015, http://www.expatfocus.com/expatriate-los-angeles-language.

[22] Dennis P. Andrulis, Nadia J. Siddiqui, and Jenna L. Gantner, "Preparing Racially and Ethnically Diverse Communities for Public Health Emergencies," *Health Affairs* 26, no. 5 (September 2007): 1269–1279, http://content.healthaffairs.org/content/26/5/1269.full.

cannot happen without extensive work involving the pre-planning and engagement within community-based organizations before emergencies occur. Ensuring that response plans reflect ways to address language barriers can minimize emergent impacts. Access to medical interpreters will help establish and improve the "cultural and linguistic linkages to LEP communities."[23]

According to the Department of Health and Human Services (DHHS), "addressing language challenges can help disaster responders with their missions and it is important to introduce techniques for handling language barriers and develop and implement strategies for effectively working with interpreters and bilingual staff in emergency situations."[24] Research supports that language and cultural differences pose serious barriers to public health practitioners and healthcare providers reaching and assisting certain populations impacted by health emergency or other disaster scenarios.[25] Individuals with language barriers face a number of challenges with receiving timely, accurate, and life-saving information during emergency situations impacting the homeland.[26]

Although the mass release of weaponized anthrax has not yet happened in the United States, Dr. Jeffrey W. Runge, chief medical officer at the U.S. Department of Homeland Security, told a congressional subcommittee on July 22, 2008 that the threat of a widespread biological attack to the United States is substantial. He also shared that government officials are aware that certain terrorist groups have used biological agents as instruments of warfare on their enemies and that these weapons are well within the

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[23] Sharyne Shiu-Thornton et al., "Disaster Preparedness for Limited English Proficient Communities: Medical Interpreters as Cultural Brokers and Gatekeepers," *Public Health Reports* 122, no. 4 (2007): 466–71.

[24] Office of Minority Health, *Cultural Competency in Disaster Response: A Review of Current Concepts, Policies and Practices* (Washington, DC: U.S. Department of Health & Human Services, 2008), https://www.thinkculturalhealth.hhs.gov/pdfs/DisasterPersonneEnvironmentalScan.pdf.

[25] Shiu-Thornton et al., "Disaster Preparedness for Limited English Proficient Communities: Medical Interpreters as Cultural Brokers and Gatekeepers," 466–71.

[26] Jonathan Purtle, Nadia J. Siddiqui, and Dennis P. Andrulis, *Language Issues and Barriers* (Austin, TX: Texas Health Institute, 2015), http://www.texashealthinstitute.org/uploads/1/3/5/3/13535548/language_issues_and_barriers-purtle.pdf.

terrorists' reach.[27] To prepare better for an aerosolized anthrax release, planners, and responders can learn from emergency events, such as the 1995 Northridge earthquake, Hurricanes Katrina and Rita in 2005, the 2007 Southern California wildfires, as well as countless other natural and manmade disasters.[28] Evidence supports that language barriers posed significant challenges to populations impacted by these incidents.[29]

With that in mind, how do local and state health departments and their partners evaluate and develop strategies and policies to address language barriers within their jurisdictions prior to emergencies? One way is through annual response assessment requirements from the CDC's Division of State and Local Readiness (DSLR). Metropolitan cities participate in a CDC-managed program known as the CRI. A major element of the annual state and federal Medical Countermeasure/Operational Readiness Review (MCM/ORR) is the ability of local responders to reach 100 percent of diverse, densely-populated jurisdictional populations to dispense emergency medications in response to a large-scale bioterrorist event within 48 hours.[30] This ability requires extensive, planned outreach to vulnerable populations and evaluating gaps and barriers that exist within states most populated areas. A section of the MCM/ORR assessment addresses practices conducted by local and state health practitioners and focuses on methods for the identification and outreach to vulnerable or at-risk populations, which includes those with language barriers.[31] Previously, these challenges were examined in some major cities; but what do linguistic barriers look like in Wisconsin?

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[27] "Busting the Anthrax Myth," accessed November 21, 2015, https://www.stratfor.com/weekly/busting_anthrax_myth.

[28] Purtle, Siddiqui, and Andrulis, *Language Issues and Barriers*.

[29] Ibid.

[30] "Strategic National Stockpile," accessed October 2, 2015, http://www.cdc.gov/phpr/stockpile/stockpile.htm.

[31] Centers for Disease Control and Prevention (CDC), *Medical Countermeasure (MCM) Operational Readiness Review (ORR) Guidance, Budget Period 3, July 1, 2014–June 30, 2015* (Bismarck, ND: North Dakota Department of Health, 2015), https://www.ndhealth.gov/EPR/PHP/MCM%20ORR%20Guidance_FINAL.pdf.

D. ADDRESSING LIMITED ENGLISH PROFICIENCY CHALLENGES IN WISCONSIN

It is no surprise that major diverse cities have linguistic barriers to consider when evaluating their emergency planning and response protocols. Wisconsin is also a very diverse state with many languages spoken, especially in the Milwaukee area where over 15 percent of individuals surveyed speak Spanish or Hmong.[32] In Wisconsin, public health agencies and healthcare organizations strive to determine the true magnitude of those impacted in emergencies and the relationship to language barriers. A report from The Joint Commission (TJC), an accreditation group responsible for the development and regulating of patient safety and appropriate standards of healthcare care standards for hospitals and affiliated organizations across the country; cites low health literacy, cultural barriers, and limited English proficiency as the "triple threat" to effective health communication.[33] Addressing linguistic barriers in the Milwaukee area center around three particular groups; the Hispanic, Hmong, and deaf and hard-of-hearing (DHH) populations.

Data from the Milwaukee metropolitan statistical area (MSA) supports that populations making up the Hispanic, Hmong, and DHH populations pose one of the largest response challenges that public health and healthcare emergency preparedness practitioners may encounter when dealing with an emergent event.[34] Although other languages are spoken, and therefore, translation or interpretation barriers can certainly exist, the Wisconsin Department of Health Services is increasing engagement and partnership with local health entities located in Milwaukee County to assess and determine innovative ways to close the increasing linguistic barriers that challenge response missions, such as those based on pandemic outbreaks or bioterrorism attacks.[35]

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[32] "Languages in Milwaukee, Wisconsin (City)," accessed October 2, 2015, http://statisticalatlas.com/place/Wisconsin/Milwaukee/Languages.

[33] "Understanding Cultural and Linguistic Barriers to Health Literacy," accessed October 29, 2015, http://www.medscape.com/viewarticle/717468.

[34] "Languages in Milwaukee, Wisconsin (City)."

[35] "National CLAS Standards," accessed October 28, 2015, https://www.dhs.wisconsin.gov/minority-health/clas.htm.

E. HOW ARE LINGUISTIC BARRIERS DETERMINED AND EVALUATED?

A factor to consider when determining language barriers posed to health emergency response is the basis and accuracy of a jurisdiction's population data used by practitioners to develop their policies and strategies for outreach. The primary collection method (and basis for the MCM/ORR and other health planning and response assessments) stem from the United States Census Bureau, which can undercount those with language barriers.[36] Research supports that people of certain ethnicities or in poverty situations are historically undercounted and have lower response rates to current methods used to collect census data, such via door-to-door mailings.[37] Inaccuracy of census data among certain community groups can be attributed to many reasons. For example, individuals with LEP or literacy barriers have difficulty understanding the purpose of the census or see the census as a form of government enforcement leading to the fear and distrust issue discussed later in this thesis.[38] It is easy to understand how populations could misinterpret the reasons behind census participation. A longstanding issue with government programs is the trust or lack of trust that exists with certain populations. As it relates to census data collection practices, some fear that their responses may be used by government officials to deport or incarcerate individual or family members or may remove their access to the social welfare programs they rely on for assistance.[39] Contributing to the problems associated with the census platform in terms of data accuracy is the frequency with which the data is collected. The Census Bureau collects data every 10 years; however, in Wisconsin, nearly 1,000 refugees arrive each year most of whom are non-English speaking or are of limited-English proficiency.[40] Health practitioners working to gauge and develop strategies to address language barriers may find their numbers are much higher than expected if working from

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[36] "Reasons behind Inaccuracies in the Census," accessed October 31, 2015, http://www.civilrights.org/census/accurate-count/inaccuracies.html.

[37] Ibid.

[38] Ibid.

[39] Ibid.

[40] "Statistics, Population & Census Data," accessed October 31, 2015, http://dcf.wi.gov/refugee/statistics.htm.

census data that is, for instance, nine years old. According to the State of Wisconsin Minority Health Officer, the census data must be accompanied with "whole community" engagement and broader outreach to have a more accurate grasp on the cultural and linguistic barriers in jurisdictions. Not doing so may result in increased morbidity and mortality numbers in pandemic outbreaks, bioterrorism or other emergency incidents based on inaccurate predictions. Thus far, this chapter has discussed non-English speaking or limited English proficiency challenges that public health and healthcare practitioners should consider when planning for pandemic or bioterrorism incidents; but what about those who are deaf or hard-of-hearing?

F. CONSIDERING DEAF AND HARD-OF-HEARING POPULATIONS IN EMERGENCIES

Are emergency planning and response practitioners considering DHH populations? Sign Language Interpreter Lydia Callis writes, "Deaf individuals are more likely to miss early warnings because they aren't listening to the radio or television and when Hurricane Katrina hit, there seemed to be no FEMA provisions for the hard-of-hearing, and deaf survivors were never informed when volunteer interpreters were finally available."[41]

For those reporting a disability in the hearing, vision, cognitive, ambulatory, self-care, or independent living categories, Milwaukee data supports that 3.7 percent of adults ages 18–65 are deaf or hard-of-hearing with 14.3 percent of the population 65 and older reported as a deaf or hard-of-hearing individual.[42] One particular research study found that very few state emergency operations plans (EOPs) mention how they would contact deaf people in an emergency. "There are huge gaps and barriers in communication during emergencies," said Donna Dahrouge, a project manager at UC Berkeley's Preparedness

[41] Lydia Callis, "Deaf during Disaster," Interpreting Services, accessed October 31, 2015, http://www.signlanguagenyc.com/deaf-during-disaster/.

[42] Wisconsin Department of Health Services, *County Disability Estimates, 2008* (Madison, WI: Wisconsin Department of Health Services, 2010), https://www.dhs.wisconsin.gov/disabilities/physical/acs2008disbycounty.pdf.

and Emergency Response Research Center (PERRC).[43] PERRC surveyed over 50 EOPs from local and state governments across the country and found that while over 50 percent of EOPs made mention of vulnerable or at-risk populations, only 31 percent (of the 55 percent who mention these groups) specifically referred to those with impaired hearing.[44] Following the study, meetings were held with key emergency personnel from the 55 locations surveyed and although many said they acknowledged that communicating with hearing impaired individuals would pose a significant challenge to their response missions, only roughly 50 percent said they were aware of particular protocols and procedures for communicating with hearing impaired folks in emergencies and even less knew how to conduct or accept a relay phone call from a deaf or hard-of-hearing person.[45]

Evidence supports that at least three strategies are available that policymakers, planners, and responders can take to address linguistic barriers in their communities. First, it is critically important to identify LEP populations and develop, maintain, and improve relationships with LEP and DHH persons. Working with linguistically diverse community partners—such as the community-based organizations (CBOs) and faith-based organizations (FBOs) serving these populations—can go a long way to address linguistic challenges prior to health emergencies and thus improving outcomes for impacted LEP groups.[46] Second, although federal public health and healthcare preparedness funding allocations continue to decline, state and local jurisdictions need to determine activity priorities based on jurisdictional gaps.[47] In Wisconsin, surveys have been conducted by state preparedness programs the last three years across all 72 counties. The results have shown an increase of linguistic gaps in communities, especially in the

[43] Susan FitzGerald, "Gaps in Emergency Preparedness for Hearing Impaired Raise Alarm," *The Hearing Journal* 66, no. 3 (March 2013): 20–22, http://journals.lww.com/thehearingjournal/Fulltext/2013/03000/Gaps_in_Emergency_Preparedness_for_Hearing.7.aspx.

[44] Ibid.

[45] Ibid.

[46] Purtle, Siddiqui, and Andrulis, *Language Issues and Barriers*.

[47] Lisa Schnirring, "Federal Funds for Disaster Preparedness Decline," Center for Infectious Disease Research and Policy, July 8, 2013, http://www.cidrap.umn.edu/news-perspective/2013/07/federal-funds-disaster-preparedness-decline.

most populated areas, supporting a shift in public health and hospital preparedness tasks and activities, as well as project funding allocations. These include, but are not limited to, the planning and response elements associated to an aerosolized anthrax attack or severe pandemic influenza outbreak.[48]

Lastly, involving LEP and deaf and hard-of-hearing groups in discussion and operations-based exercises provides meaningful data from which to design, evaluate, and measure performance activities outside of actual response missions.[49] The funding allocations will provide for translation and interpreter services for exercise events, as well as meetings, conferences, or other engagement opportunities with representatives of these and other groups. Furthermore, the after action report/improvement plans (AAR/IPs) provide a short- and long-term roadmap for local, state, and federal policy makers to base decisions for current and future budget periods.

To plan and respond most effectively to outbreaks or bioterrorism incidents, public health and healthcare practitioners must recognize and account for challenges or barriers that exist within their jurisdictions. Language barriers certainly pose a significant challenge to public health and healthcare preparedness goals, such as those associated with the dispensing of emergency antibiotics. In a bioterrorism incident, such as the release of anthrax, the goal of the public health workforce is to ensure entire populations receive emergency medications within 48 hours. If linguistic barriers are considered a priority, planners and responders working in public health, healthcare, and other partner organizations may lessen the otherwise unanticipated, unknown, and increased number of impacted individuals as a result of a bioterrorism incident or other emerging health threat impacting communities.

Language barriers alone represent a significant socioeconomic challenge in the response to varied health emergencies. The next chapter examines how cultural barriers further impede response to emerging public health threats across the homeland.

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[48] "Partner Communications and Alerting (PCA) Portal," accessed November 21, 2015, https://www.dhs.wisconsin.gov/pca/index.htm.

[49] Elaine Pittman, "How to Include Diverse, Vulnerable Populations in Emergency Preparedness," Emergency Management, April 11, 2011, http://www.emergencymgmt.com/disaster/Diverse-Vulnerable-Populations-Preparedness-041111.html.

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III. CULTURAL BARRIERS

A. BACKGROUND

This chapter discusses cultural barriers and the association and relevance to emergencies. Many of the examples come from the Hurricane Katrina emergency because an extensive literature has been published about the United States' experiences with this crisis. Throughout history, let alone in recent events, evidence supports that those with socioeconomic barriers suffer effects of disasters and public health emergencies more than those without these barriers, as has been evidenced by earthquakes, wildfires, hurricanes, pandemics, and countless other events across the United States and around the world.[50] Cultural barriers to public health threats and emergencies pose significant challenges at both the individual and community group level. These barriers pose challenges to culturally diverse populations as they impede their ability to respond to emergencies impacting their communities.[51]

During health emergencies, initiating and executing a culturally competent preparedness strategy is critical.[52] Although important, planners and practitioners may face challenges to developing a meaningful culturally competent plan. These barriers include inadequate funding to strengthen community outreach efforts and limited or non-existent collaboration between jurisdictions, departments, and varied disciplines. These partnerships are essential to help ensure a culturally competent, multi-disciplinary approach is taken in response to emergent events.[53]

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[50] Dennis Andrulis, Nadia Siddiqui, and Jonathan Purtle, *California's Emergency Preparedness Efforts for Culturally Diverse Communities: Status, Challenges and Directions for the Future* (Philadelphia, PA: Center for Health Equality, Drexel University School of Public Health, 2009), http://www.preventionweb.net/files/9463_CaliforniaPreparednessDiversityRepo.pdf.

[51] Ibid.

[52] Ibid.

[53] Ibid.

B. CULTURAL BARRIERS AND ROUTINE HEALTH EMERGENCIES

Evidence supports that barriers exist for certain minority groups needing healthcare in emergent situations other than natural or manmade disasters. According to the American Heart Association, AHA, over 350,000 cases of cardiac related incidents occurred outside of healthcare or hospital settings with an incredible low survival rate at only "9.5 percent" in impoverished neighborhoods because bystanders were unwilling to call 911 for assistance. However, in surrounding wealthier communities, the survival rate was over 40 percent given that bystanders were willing to perform cardiopulmonary resuscitation (CPR), as well as call 911 for assistance.[54] Research suggests that fear and distrust of having government response personnel being called into certain culturally diverse neighborhoods plays a part in this unfortunate dynamic. The AHA found that Latinos are less inclined than whites to call 911 for assistance and—along with African Americans—are 30 percent less likely to have someone perform life-saving CPR should they suffer from cardiac arrest.[55] The international science journal, *Annals of Emergency Medicine,* found that numerous factors including socioeconomic status and fear or distrust of law enforcement or other government entities served as the reasons behind these trends.[56]

"Residents of low-income, minority neighborhoods have two strikes against them: The incidence of out-of-hospital cardiac arrest is much higher than average and rates of bystander CPR are below average," states Dr. Comilla Sasson, an assistant professor at the University of Colorado School of Medicine.[57] A survey was conducted in the summer 2012 in Denver, Colorado comprised of subjects from five culturally diverse neighborhoods. Survey participants shared they were less likely to dial 911 during a cardiac episode out of fear associated to varied but interwoven factors including: distrust

[54] John Fischer, "Cultural Barriers Keep People of Color from Calling an Ambulance," *Medical Daily*, December 17, 2014, http://www.medicaldaily.com/cultural-barriers-sometimes-make-people-color-less-inclined-call-emergency-services-314750.

[55] Ibid.

[56] Ibid.

[57] Ibid.

in police forces, becoming involved in violence, and governmental challenges of their immigration statuses.[58]

C. CULTURE AND THE LINK TO SOCIAL DETERMINANTS OF HEALTH

One area that has often been overlooked by researchers is the connection between the SDoH and culture.[59] It is widely known that people respond to emergent situations in a "fight or flight" manner when they feel threatened, but how individual or group actions are displayed can be linked to SDoH factors.[60] These factors include but are not limited to language, culture, historical trauma, fear, distrust, health literacy, and a lack of transportation options. These linkages are important when considering an individual's willingness to accept, let alone have access to, government managed disaster relief.[61]

According to Rutgers University, when discussing culture, it is necessary to be mindful that every culture experiences variances and to avoid stereotyping any group.[62] Also important to account for is that not everyone feels as safe and comfortable as those entrenched in the stereotypical American culture. Culture has complexities and the time spent in American culture varies.[63] The life experiences of a 1st generation immigrant who arrived to the United States as an adult responds quite differently from an immigrant who arrived in the United States as a child and grew up in American culture or individuals who are 2nd or 3rd generation individuals. It is no different from how all individuals have unique perspectives, personalities, and experiences that have shaped their lives, which is the situation for those with varied cultural backgrounds.[64]

It is important to define what is meant by culture and the outcomes and reactions associated within this context. Many definitions can be found when searching "culture,"

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[58] Fischer, "Cultural Barriers Keep People of Color from Calling an Ambulance."

[59] Ibid.

[60] Ibid.

[61] New Jersey Preparedness Training Consortium, *Cultural Impact Overview* (New Jersey: New Jersey Preparedness Training Consortium, n.d.), accessed September 24, 2016, http://www.nj-ptc.org/training/materials/Rutgers/SSW_SchoolSocWkrs/CulturalImpactOverview.pdf.

[62] Ibid.

[63] Ibid.

[64] Ibid.

and according to some in the nursing field, culture is defined as "the learned and transmitted knowledge of values, beliefs and lifestyles of a particular group that are generally transmitted inter-generationally and influence thinking, decisions and actions in patterned ways."[65] The next chapter, "Historical Trauma" explores this topic in depth.

D. WHY IS CULTURE IMPORTANT IN AN EMERGENCY?

The Rutgers study, referenced earlier, identified four primary factors that help explain the importance and significance of cultures during emergency response situations:[66]

- Culture plays a bit part in how people prepare, respond, and recover from emergencies. As planners and responders, it is necessary to understand that some cultures are more emotive than others and their sensitivities may interrupt or delay response or relief efforts.[67] Historical trauma presents unique and significant barriers given some may have been victimized in the past. Also relevant is the fact that some cultures are used to taking care of themselves and their families and deem it disgraceful to be provided assistance from governmental programs.[68]

- Culture is about family and a certain comfort and a sense of reassurance is provided when all together and especially in times of emergencies.[69] Cultures have tight bonds within their community groups. It is within these interwoven connections where unity and a sense of control over emergent situations, such as health emergencies exist. Inner cultural community connections provide a level of unmatched social support that "outsiders" may not understand, comprehend, or appreciate.[70] Communities impacted by emergencies, particularly culturally diverse communities, rely on each other for support, security, and healing. For this reason, it is so important to get families reunited with their loved ones as soon as possible to allow the healing and rebuilding to begin following the impacts of a tragic event.[71]

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65 "Transcultural Nursing," accessed January 19, 2017, http://currentnursing.com/nursing_theory/transcultural_nursing.html.

66 New Jersey Preparedness Training Consortium, *Cultural Impact Overview.*

67 Ibid.

68 Ibid.

69 Ibid.

70 Ibid.

71 Ibid.

- As referenced earlier in this chapter, culture incorporates values, beliefs, and lifestyles and defines the makeup of a culturally-diverse community.[72] Cultures relate to what this nation and its peers consider "appropriate behavior" and provide an "in-group" with others of a similar ethnicity, which contributes to a shared approach or sense of recovery for those living within a shared community impacted in disasters.[73] No one wants to be alone and a community provides more than housing and services; it provides a shared identify that is extremely important for racial and ethnic minority groups.[74] The support system that exists in minority communities may provide the best opportunity for individuals and families to survive emergent events given their strong social support functions and the trust that exists within its community members.[75]

- As referenced earlier, historical trauma (described in detail in the following chapter) needs to be considered when discussing cultural challenges in emergencies.[76] Although significant strengths exist within a culturally-interwoven community, some groups may still be more vulnerable than others. Immigrants new to the United States may not have the means, literacy, or "understanding of cultural norms" to take necessary actions to survive emergencies in the homeland. Many populations have a multitude of challenges and socioeconomic barriers in their lives (many associated to the SDoH).[77] In health or other emergencies, these factors are likely to impact them more adversely than those who have lived a life without these challenges. Past experiences (and the historical trauma related to them) have significant consequences in emergencies. Minority groups that have deep feelings of fear and distrust of government and government programs may refuse assistance before, during, or following a health emergency or disaster event.[78] Another important factor related to cultural barriers in emergencies is that some populations may be unaware that government assistance is offered to them following disasters.[79] This factor further supports the argument that a significant amount of community outreach and engagement is required by public health

[72] "Transcultural Nursing."

[73] New Jersey Preparedness Training Consortium, *Cultural Impact Overview.*

[74] Ibid.

[75] Ibid.

[76] Ibid.

[77] Ibid.

[78] Ibid.

[79] Ibid.

> practitioners and their partners, before emergencies occur, to minimize the consequences that stem from varied disasters.[80]

As evidenced from AAR written as a result of Hurricane Katrina, economic inequality prevents some populations from accessing critical life-saving resources.[81] For example, in New Orleans, many of the individuals and families hit the hardest lived in the most hazardous, unsafe, and least desirable areas of the city, and their homes were substandard as opposed to those living in higher income, neighboring areas of Lower Ward 9.[82] These findings support that minority groups living in impoverished areas will be impacted worse than others in living outside of these conditions. It is critical that government agencies work harder to ensure that racial and ethnic minority groups are familiar with assistance programs, transportation options, and varied mental health programs to minimize impacts, such as those experienced during Hurricane Katrina.[83]

E. GIGER AND DAVIDHIZAR TRANSCULTURAL ASSESSMENT MODEL

One way for public health and healthcare practitioners to evaluate and develop strategies to address cultural barriers is by using "Giger and Davidhizar's Transcultural Assessment and Intervention Model," as shown in Figure 1.[84] The model was originally developed to assist nurses striving to strengthen and understand cultural diversity and has been adopted by several public health professionals and healthcare service practitioners, broadly. The model is regarded as a strategy and tool to help assist practitioners in their efforts to provide disaster crisis counseling with entire populations, as it intersects two critical factors; culturally competency, and a respect of diversity.[85] The GDTAM is based on six particular principles focused on providing the best healthcare possible to diverse,

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[80] New Jersey Preparedness Training Consortium, *Cultural Impact Overview.*

[81] Ibid.

[82] Ibid.

[83] Ibid.

[84] Joyce Newman Giger and Ruth Davidhizar, "The Giger and Davidhizar Transcultural Assessment Model," *Journal of Transcultural Nursing* 13, no. 3 (July 1, 2002): 185–88, doi: 10.1177/10459602013003004.

[85] Ibid.

cultural groups.[86] GDTAM is based on the principle that cultures are unique and individuals should be assessed according to: "(1) communication, (2) space, (3) social organization, (4) time, (5) environmental control, and (6) biological variations."[87]

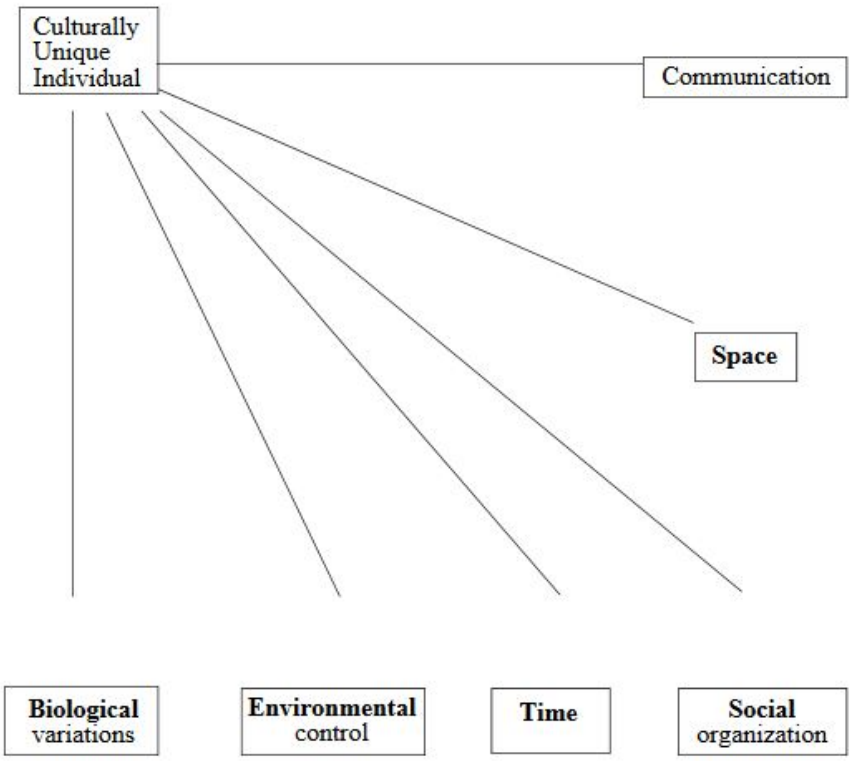

Figure 1. Giger and Davidhizar's Transcultural Assessment Model.[88]

1. Cultural Communications

Unlike language barriers discussed in Chapter II, cultural communications include both verbal and nonverbal communications common in an individual's culture and environment.[89] Not surprisingly, communications often presents one of the most significant challenges for those working to assist others from diverse cultural

[86] Giger and Davidhizar, "The Giger and Davidhizar Transcultural Assessment Model," 185–88.

[87] Ibid.

[88] Source: Joyce Newman Giger and Ruth Davidhizar, *Transcultural Nursing: Assessment and Intervention* (St. Louis, MO: Mosby, 1999).

[89] Ibid.

backgrounds, particularly in disasters.[90] Communication is important to cultures and is the basis for how populations interact and behave as they work to preserve their cultural origins.[91]

2. Space

Giger and Davidhizar reference "space" as the distance that exists between individuals when they converse or interact.[92] In all cultures, communication occurs within the confines of space. Within the GDTAM, four particular "zones" are related to the interpersonal space that needs to be considered in response to public health or other emergencies: "intimate, personal, social and consultative and public."[93] "Rules" that pertain to a comfortable personal distance vary between cultures, as do the attitudes towards an individual's "personal area." Furthermore, people have their own perspective and comfort level related to what they consider their "personal and/or intimate space."[94] It is easy to understand that when a person's personal space is challenged (in any culture), a sense of discomfort can occur, and for public health and healthcare providers working in emergencies, the consequences include further damaging trust, an individual refusing critical care, or that person not returning for essential treatment or further care.[95] With some vaccines and antibiotics distributed and dispensed by government health agencies or healthcare entities, multi-dose prophylaxis or treatment is essential in the prevention or recovery from certain deadly exposures; thus, this latter phenomenon is just as important as the "first refusal of care."[96]

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[90] Ibid.

[91] Giger and Davidhizar, *Transcultural Nursing: Assessment and Intervention*.

[92] Ibid.

[93] Ibid.

[94] Ibid.

[95] Ibid.

[96] Ibid.

3. Social Organization

The GDMA model cites social organization as "the manner in which a cultural group organizes itself around the trusted family group." Social aspects, such as family backgrounds, religious values, and beliefs, and the role within the family may all relate to ethnicity and culture, and are certainly germane before, during, and after health related or other emergencies occur.[97]

4. Time

As time is relevant in many aspects of everyone's lives; according to Giger and Davidhizar, it is also important in terms of "interpersonal communication."[98] Time must be respected in this context given certain groups can either be "past, present, or future oriented."[99] For example, preventative healthcare requires a certain level of "buy-in" and understanding of the benefits given the rewards of preventative care are "future oriented." The rewards and benefits, as described, can only happen through enhanced and dedicated community outreach with racial and culturally diverse populations prior to emergent situations taking place.[100]

5. Environmental Control

Giger and Davidhizar describe the environmental control as the "ability of the person to control nature and to plan and direct factors in the environment that affect them."[101] Americans believe that they will seek healthcare when they need it and that they are in control of the nature or reasons behind the healthcare visits, which is not always the case for people from varied cultural groups. These groups do not experience as "strong of a belief in internal control" but do have a "greater belief in external influences."[102] As a result, some view healthcare or other emergency care as "useless or

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[97] Giger and Davidhizar, *Transcultural Nursing: Assessment and Intervention*.

[98] Ibid.

[99] Ibid.

[100] Ibid.

[101] Ibid.

[102] Ibid.

futile" and these attitudes or viewpoints certainly present challenges to practitioners looking to provide assistance in response to bioterrorism or other health emergencies impacting the homeland.[103]

6. Biological Variances

Lastly, Giger and Davidhizer note "there is as much diversity **within** cultural and racial groups as there is **across** cultural and racial groups."[104] It is important for public health and healthcare practitioners to gain a better understanding of the cultural datasets and relevant biological variances relevant to varied cultural groups within communities.[105] This understanding serves as a perfect "starting point" for practitioners looking to provide "culturally appropriate care" in response to varied disasters and health emergencies.[106]

F. RACE, CULTURE, AND HURRICANE KATRINA

It is well documented that both race and culture have had severe impacts in response to emergencies, as was the case before, during, and after the Hurricane Katrina disaster.[107] Everyone remembers the horrific video clips and photographs of African American victims following the event. Socioeconomic barriers were evident and the racial disparities among groups provoked numerous debates regarding difficult public policy steps to address the areas oppressed racial history that separated their community populations.[108]

At one point, New Orleans City Councilman Oliver Thomas said that first responders were too fearful of African American people to "go in and save them" and the reports of violence, looting, and shootings created fear in people that may otherwise have

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[103] Ibid.

[104] Giger and Davidhizar, *Transcultural Nursing: Assessment and Intervention*.

[105] Ibid.

[106] Ibid.

[107] Sean Alfano, "Race an Issue in Katrina Response," *CBS News*, September 3, 2005, http://www.cbsnews.com/news/race-an-issue-in-katrina-response/.

[108] Ibid.

provided sheltering or assistance.[109] He said that many of the populations were being portrayed as "thugs and thieves."[110] One woman waiting to find shelter said, "…if we were lucky, we would have died."[111] Also, *CBS News* reported that many minority members of Congress expressed anger and frustration and said they felt the government responded slowly in assisting African Americans during Hurricane Katrina.[112]

The connection between races and cultures, and perceptions of fair and equal treatment, were apparent during and after the hurricane event. Secretary of State Condoleezza Rice, the most prominent African American person in the Bush administration, downplayed the criticism of news reports speaking to the differing treatment of populations during the disaster saying: "Americans would somehow in a color-affected way decide who to help and who not to help, I, just don't believe it."[113] In the same interview she shared, "the African-American community has obviously been very heavily affected. But people are doing what they can for Americans. Nobody wants to see any American suffer."[114]

Although some members of Congress "blamed" personnel for poorly executed response missions, *CBS News* reports that many populations having discussions in their restaurants, businesses, and homes (as well as via radio programs and social media) viewed the response as political.[115] Although situations in which any group or population is completely unified with an opinion or emotion rarely occur, many African Americans continue to be angry about the event and outraged at the how their family and community members were left behind in New Orleans and the lack of priority to rescue them as a result of the hurricane.[116] "Black people are mad because they feel the reason for the slow response is because those people are black and they didn't support George Bush,"

[109] Ibid.

[110] Ibid.

[111] Alfano, "Race an Issue in Katrina Response."

[112] Ibid.

[113] Ibid.

[114] Ibid.

[115] Ibid.

[116] Ibid.

said Ron Walters, a professor of government and politics at the University of Maryland. "And I don't expect that feeling to go away anytime soon."[117] As trust serves at the center of government operations with the public, it was certainly tested with some populations during Hurricane Katrina. Some consider that "Blacks Lives Matter" stemmed from this disaster.[118]

As Jamelle Bouie explained in his 2015 article, "Where Black Lives Matter Began", he feels that while the government could not stop the hurricane itself, it could have done more but did not to prepare the hardest hit areas of New Orleans prior to the event.[119] Evidence supports that Hurricane Katrina was one of the worst disasters in U.S. history. It was an event that claimed the lives of over 1,800 Americans in addition to driving tens of thousands from their homes.[120] In the aftermath of Hurricane Katrina, New Orleans was marked with "scandalous mismanagement" and both response and elected personnel were deemed both incompetent and insensitive.[121] The multitude of residents who were not rescued and brought to safe areas needed to deal with both inadequate aid and a lack of shelter, and according to Bouie, many people in the hardest hit areas of New Orleans were "abandoned by officials" and were unable or perhaps unwilling to help them.[122] Whether realities or perceptions, the results or lack of results of this country's response actions have consequences, such as fear and distrust, and directly relate to future response missions. U.S. history and how it impacts this nation's future is discussed at length in the next chapter of this thesis.

G. LESSONS LEARNED FROM HURRICANE KATRINA

To continue to move forward and bridge the gap that cultural barriers present during emergencies, it is necessary to incorporate and build-on the lessons-learned into

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[117] Ibid.

[118] Jamelle Bouie, "Where Black Lives Matter Began," *Slate*, August 23, 2015, http://www.slate.com/articles/news_and_politics/politics/2015/08/hurricane_katrina_10th_anniversary_how_the_black_lives_matter_movement_was.html.

[119] Ibid.

[120] Ibid.

[121] Ibid.

[122] Ibid.

public health emergency preparedness (PHEP) planning, which begins by examining the incident and working to respect the social dynamics connected to the disaster. In an article written to *Health Affairs* by Dr. Dennis Andrulis, of the Texas Health Institute, he argued that the tragedy of Hurricane Katrina provided a realistic example of what happens when socioeconomic barriers are not integrated into local, state, and federal government "preparedness planning and execution."[123] In his article, he noted that disadvantaged, poor, and ethnic minorities suffered "disproportionate magnitudes of destruction, injury, disease, and death."[124] Many sources note the most damaged areas in New Orleans were primarily populated by low-income African Americans. As noted earlier, many of the most impacted areas had substandard housing and lacked transportation options essential for evacuation. Further contributing to these problems were many of those eventually impacted did not evacuate prior to the storm given the limited, inconsistent, or no evacuation orders or distrust in government personnel tasked with executing emergency evacuation missions.[125]

Dr. Andrulis also reported that Latinos and Asian Americans also faced similar challenges during Hurricane Katrina.[126] Barriers, such as "language, culture, and their status as undocumented or uninsured residents," compounded impacts of Hurricane Katrina for certain populations.[127] Practitioners need to incorporate factors, such as culture, language, literacy, historical trauma, and distrust to help strengthen their approaches to emergent events, as these factors are likely to be a significant part of achieving incident response objectives.[128] More research and analysis is needed, however, to determine the extent to which "public health preparedness research, programs, and policies address these factors as integral components of preparedness."[129]

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[123] Andrulis, Siddiqui, and Gantner, "Preparing Racially and Ethnically Diverse Communities for Public Health Emergencies," 1269–79.

[124] Ibid.

[125] Ibid.

[126] Ibid.

[127] Ibid.

[128] Ibid.

[129] Ibid.

A study was conducted in 2007 to assess progress in addressing gaps stemming from Hurricane Katrina. Five general themes emerged to assist policy and decision makers to thwart impacts that future events will present. These five areas include (1) emergency risk communication, (2) training and education, (3) resource guides for planners and responders, (4) measurement and evaluation, and (5) policy and program initiatives.[130] The results of those themes are as follows.

1. Emergency Risk Communication

Dr. Andrulis references a study conducted in 2007, which reported that increasingly more government and private organizations have distributed emergency preparedness and response information to their culturally diverse populations, particularly through translated resource.[131] The issue remains however that few of the current program priorities address the needs of health literacy government distrust. The study discussed the importance of developing community partnerships, and using other trusted venues to reach these populations, but most of the resources and information needed would be via the internet.[132] The problem space, unfortunately, is that many racial and ethnic groups fail to have access to these resources or have limited computer skills needed to access critical information, let alone that most of the information is only in English.[133]

2. Training and Education

More training and education resources have become available related to race, ethnicity, and culture since the months following Hurricane Katrina.[134] Preparedness programs working under the CDC umbrella, for example, are providing "cultural competency" related courses, workshops, seminars, and training sessions marketed

[130] Andrulis, Siddiqui, and Gantner, "Preparing Racially and Ethnically Diverse Communities for Public Health Emergencies," 1269–79.

[131] Ibid.

[132] Ibid.

[133] Ibid.

[134] Ibid.

towards a variety of populations. Although these training sessions have helped, the study pointed out that the training offerings were short-lived and at the introductory levels only. To address these gaps and ensure population-specific significance, some community-based organizations have offered culture-specific, practical programs.[135] To provide an example of successful local-level engagement and outreach, in San Francisco, the Chinese Health Coalition (CHC) established a Chinatown Disaster Response Program to train their community volunteers in incident management and empower community groups to "prepare for independent survival."[136]

3. Response Guides

The CDC established a workgroup tasked with providing guidance to local, state, and tribal public health preparedness planners to help them in their efforts to define, locate, and reach minority populations in disasters.[137] In Wisconsin, as with many states, hazard vulnerability assessments (HVAs) are conducted to evaluate major racial and ethnic group risks, varied spoken languages, preferred emergency messaging options, and overall barriers that may exist within their culturally-diverse communities. Although these practices offer guidance and recommendations for planning and responding to a wide-range of emergencies, such as Hurricane Katrina, questions remain as to the specific coordination, responsibility, and accountability of practitioners working in health emergencies.[138]

4. Measurement and Evaluation

Although many local and state jurisdictions have metrics, broadly, for emergency preparedness, standardized criteria is still lacking that consistency and accurately addresses the specific needs of minority populations within the CDC PHEP

[135] Andrulis, Siddiqui, and Gantner, "Preparing Racially and Ethnically Diverse Communities for Public Health Emergencies," 1269–79.

[136] Ibid.

[137] Ibid.

[138] Ibid.

framework.[139] Over the years, the CDC has created, distributed, and revised local and state capability assessments intended to gauge a health jurisdiction's ability to respond to a bioterrorism or other public health threat impacting minority populations; however, these measurement and evaluation tools, such as the CRI annual assessments of metropolitan jurisdictions, do not assess other major socioeconomic barriers or other germane challenges, such as culture, health literacy, and government distrust.[140]

5. Policy and Program Initiatives

Research supports that preparedness plans, policies, and procedures dedicated to community outreach and engagement in minority communities have historically been lacking.[141] Progress continues to be made, however, evidenced by the efforts of the Office of Minority Health (OMH) located at the Department of Health and Human Services.[142] They have provided CLAS trainings to local and state emergency managers and health professionals tasked with assisting Latino populations impacted in health of other emergent events.[143] Following the tragic events of both 9/11 and Hurricane Katrina, local and state health agencies have made some progress with their racial and ethnic partners. Outreach efforts include but are not limited to identifying barriers to communications, opportunities for collaboration, preferred content areas on preparedness, and preferred communication channels.[144]

H. WHERE DO WE GO FROM HERE?

The field of public health emergency response is fluid and dynamic.[145] Public health practitioners need to continue to dedicate efforts to involve their racial and ethnic community leaders in varied emergency planning priorities to respond better to events,

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[139] Ibid.

[140] Andrulis, Siddiqui, and Gantner, "Preparing Racially and Ethnically Diverse Communities for Public Health Emergencies," 1269–79.

[141] Ibid.

[142] Ibid.

[143] Ibid.

[144] Ibid.

[145] Ibid.

such as pandemic influenza, Ebola and Zika viruses, and other outbreaks and emergencies to gain perspectives based on their community partner suggestions "from the field."[146] Continuing to partner with and draw from the experiences and expertise of minority organizations will further strengthen public health emergency preparedness goals across the country.[147] "Bridging the gap" by dedicating time, money, and efforts to engage with culturally diverse populations will help build trust and strengthen public health planning and response initiatives and policies needed to protect all populations in the homeland.

This chapter has discussed how cultural barriers present significant challenges to response missions stemming from bioterrorism incidents or emerging health threats. The following chapter, Historical Trauma, describes how fear, distrust, and past actions of government can impact future health emergencies. The relevance of these psychological realities is a predicted increase in morbidity and mortality rates across U.S. populations as a result of an attack or infectious disease outbreak.

[146] Andrulis, Siddiqui, and Gantner, "Preparing Racially and Ethnically Diverse Communities for Public Health Emergencies," 1269–79.

[147] Ibid.

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IV. HISTORICAL TRAUMA

"While in some ways, individual trauma affects people in a fairly universal manner, historical trauma that has not been addressed will shape the way people respond to current traumatic experiences."[148] Another critical socioeconomic barrier deals with historical trauma. This chapter explores and describes how traumatic experiences of the past directly associate to future public health response outcomes. A particular focus is placed on Native American, African American, Asian American, and Puerto Rican historical situations, experiences, and dynamics that must be considered and respected by public health emergency preparedness practitioners and their partners looking to strengthen response plans. Dr. Michelle Sotero from the University of Nevada, Las Vegas describes the conceptual model of historical trauma as "a way to help public health practitioners and researchers gain a broader perspective of health disparities and aid in the development of new approaches for improving the health status of racial/ethnic populations in the United States."[149] The model, described, allows for the increased probability of survival in health emergencies or natural disasters.[150]

A. INTRODUCTION

According to Substance Abuse and Mental Health Services, SAMHSA, "Historical Trauma is a form of trauma that impacts entire communities. It refers to the cumulative emotional and psychological wounding, as a result of group traumatic experiences that is transmitted across generations within a community."[151] Historic events and multi-generational traumatic experiences within diverse populations has had

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[148] Vivian H. Jackson and the NCTSN Culture Consortium, *Conversations about Historical Trauma: Part Two* (Los Angeles, CA and Durham, NC: The National Child Traumatic Stress Network, 2013), http://www.nctsn.org/sites/default/files/assets/pdfs/historical_trauma_pt_2.pdf.

[149] "A Conceptual Model of Historical Trauma: Implications for Public Health Practice and Research," accessed October 4, 2016, http://www.vawnet.org/summary.php?doc_id=3480&find_type=web_sum_GC.

[150] Ibid.

[151] "Types of Trauma and Violence," last updated March 2, 2016, http://www.samhsa.gov/trauma-violence/types.

consequences been known to alter response missions to varied events.[152] Furthermore, "unresolved grief and anger" often go together with this type of trauma and are often partnered with varied physical, mental, and behavioral health disorders.[153] Researchers at SAMHSA go on to say, "this type of trauma is often associated with racial and ethnic population groups in the United States who have suffered major intergenerational losses and assaults on their culture and well-being."[154]

Native Americans have experienced significant traumatic events throughout their history.[155] The following section describes some of those instances and how they relate to current health emergency planning and response objectives.

B. HISTORICAL TRAUMA: NATIVE AMERICANS

With respect to Native Americans, a report from SAMHSA tells us, "This population has been exposed to generations of violent colonization, assimilation policies, and general loss."[156] Due to this loss, people with Native American backgrounds have suffered and had attacks on their people, their cultures, and their long-standing traditions.[157] The impacts that historical trauma has had on Native American populations can be found in a variety of areas, such as the changing of the ways they raise their children, dramatic changes to their family structure, and overall, the deterioration of the inter-tribal relationships between one another.[158] Additionally, Native American's have higher rates of health risk factors that public health and healthcare practitioners must be aware of when striving to understand the historical trauma factors that exist within Indian country. These factors include overall poor physical and emotional health, low self-

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[152] "Types of Trauma and Violence."

[153] Ibid.

[154] Ibid.

[155] Substance Abuse and Mental Health Services Administration, *Tips for Disaster Understanding Historical Trauma When Responding to an Event in Indian Country* (HHS Publication No. SMA14-4866) (Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014), http://store.samhsa.gov/shin/content//SMA14-4866/SMA14-4866.pdf.

[156] Ibid.

[157] Ibid.

[158] Ibid.

esteem, depression, substance abuse, and higher rates of suicide than with other populations.[159] As referenced earlier, historical trauma has negatively impacted the "sense of community within the tribe itself."[160] These issues, coupled with distrust of "outsiders" and government entities based on experiences as described in this chapter, have created significant barriers that must be addressed.[161]

History has taught people that some soldiers have experienced what medical personnel call "shell shock."[162] What was unclear for practitioners was how to care for the condition, let alone characterize it as an actual "disorder or disease."[163] Researchers now understand that survivors of traumatic experiences, such as torture, rape, and emergencies have shared or similar symptoms as soldiers who have experienced "shell shock" and that traumatic events bring "intense fear, helplessness, or horror."[164] In the fall and bitterly cold winter between 1838 and 1839, thousands of people from the Cherokee tribe were forcibly marched 800 miles from the southeastern United States to an area west of the Mississippi River where over 4,000 of 18,000 died. This historic event became known as the "Trail of Tears."[165] It can be assumed that they felt the same "intense fear, helplessness and horror" given the accounts of the event and perhaps every tribe in the United States has their own story of both "relocation and warfare" and continue to deal with their own anxieties stemming from varied events impacting populations of Indian country.[166]

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[159] Substance Abuse and Mental Health Services Administration, *Tips for Disaster Understanding Historical Trauma When Responding to an Event in Indian Country*.

[160] Ibid.

[161] Ibid.

[162] Ibid.

[163] Ibid.

[164] Ibid.

[165] "Indian Country Diaries," accessed November 9, 2016, http://www.pbs.org/indiancountry/history/trail.html.

[166] Ibid.

C. FORCED STERILIZATION IN NATIVE AMERICAN WOMEN

Before delving into the sterilization topic within this chapter, it is important to note the significance involved, overall, of Native American women and the psychological and physical trauma they have endured. A report released by the Department of Justice, American Indians and Crime, found that "Native American women suffer violent crime at a rate three and a half times greater than the national average."[167] Researchers across the country estimate that this statistic is in actuality low given that over 70 percent of these types of assaults are rarely if ever reported.[168] It can be assumed that traumatic experiences, such as forced sterilization amongst Native American women directly associates to the trust, or more importantly, lack of trust in government officials to carry out their response missions in health emergencies or natural disasters, which coupled with abuses, creates a significant psycho-socio barrier between ethnicities.

Under the banner of public health, U.S. policy at the turn of the 20th century empowered the government to sterilize "unwilling and unwitting people."[169] Currently applicable in 30 states, the laws and policies list attributes, such as the mentally insane, feeble-minded, overly dependent, or diseased, and have deemed some Native American women as "incapable of regulating their own reproductive abilities."[170] These laws and policies have justified U.S. "government-forced" sterilizations of women including those from Native American descent.[171] Government forced sterilizations across certain populations in U.S. history has led to further exploitations and created divisions among racial and ethnic groups in the United States. It is these types of actions of the past that account for the fear and distrust of government; fear that continues to exist within U.S. communities to this day.[172]

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167 "Indian Country Diaries."

168 "Forced Sterilizations of Indigenous Women," accessed November 9, 2016, http://nativeamerican netroots.net/diary/234.

169 Ibid.

170 Ibid.

171 Ibid.

172 Kathryn Krase, "History of Forced Sterilization and Current U.S. Abuses," Our Bodies Ourselves, October 1, 2014, http://www.ourbodiesourselves.org/health-info/forced-sterilization/.

Evidence supports that between the late 1960s and the early 1970s, over 40 percent of all Native American women of childbearing age had been medically sterilized without their consent.[173] These procedures were conducted by the federally funded "Indian Health Service" (IHS), which was managed at that time by the "Bureau of Indian Affairs" (BIA).[174] It is reported that the sterilization program events being conducted were uncovered by members of the American Indian Movement (AIM) while employed at the "BIA headquarters" in 1972.[175]

An abnormally large percentage of American Indian women were sterilized in the 1970s and the government played an important role in the initiation of this sterilization campaign.[176] This role is of additional importance because government officials have the responsibility to act in the best interests of the tribe with the end result being equalization of socio-economic status and increased sovereignty for the tribes.[177] Clearly, the government violated this responsibility through the initiation of this sterilization campaign that was deemed a calculated, genocidal assault on the American Indian population.[178]

The forced sterilization of Native American women are still felt within tribes today and is deemed yet another chapter in the long book of abuses and traumatic events against native people at the hands of the U.S. government.[179] It will take both oversight and care by public health and healthcare practitioners and members of the general public to help mend these injustices against Native American people but it is essential to

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[173] Krase, "History of Forced Sterilization and Current U.S. Abuses."

[174] Ibid.

[175] Ibid.

[176] Tyler Bailey, "Issues in American Indian Health," University of Minnesota Duluth, accessed November 9, 2016, http://www.d.umn.edu/cla/faculty/tbacig/studproj/is3099/nahealth/paper.html.

[177] Ibid.

[178] Ibid.

[179] Jane Lawrence, "The Little-Known History of the Forced Sterilization of Native American Women," *JSTOR Daily* 24, no. 3 (Summer 2000): 400–419, http://daily.jstor.org/the-little-known-history-of-the-forced-sterilization-of-native-american-women/.

understand it is likely this nation may never be forgiven for the horrific events perpetrated against them all in "the name of public health."[180]

To prepare better for emerging public health threats and natural disasters impacting Native Americans, practitioners must not only have an appreciation for historical trauma but a plan for addressing gaps that may exist to help ensure survival in emergencies, and the first step is tailoring the response efforts to the experiences of the tribal community.[181] Past experiences of violence and cultural degradation increase the likelihood of fear and mistrust of responders outside of the tribal populations.[182]

It is essential that public health practitioners and their partners remember that Americans are guests in sovereign nations and need to show respect for Native American culture.[183] Working to establish relationships with tribal liaisons, emergency management liaisons, or spiritual leaders will help establish or strengthen trust while increasing U.S. credibility as practitioners working with Native American populations.[184] It does not happen overnight. As referenced earlier, these traumatic experiences run deep and although it can be hoped that trust can be established, it may be necessary to understand that Americans may always be seen as "outsiders" and that their intentions are not honest or meaningful.[185] Thus, efforts must focus on nurturing and strengthening relationships with this nation's Native American people, relationships that have been damaged. This country must help "bridge the gap," which health professionals have contributed to, through experiences linked to historical trauma.[186] While disagreements may arise with the "beliefs and customs" of the tribe or tribes impacted in health or other

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[180] Lawrence, "The Little-Known History of the Forced Sterilization of Native American Women," 400–419.

[181] Substance Abuse and Mental Health Services Administration, *Tips for Disaster Understanding Historical Trauma When Responding to an Event in Indian Country*.

[182] Ibid.

[183] Ibid.

[184] Ibid.

[185] Ibid.

[186] Ibid.

emergencies, it is critical that practitioners are respectful and mindful of Native American "choices, culture, and values."[187]

D. HISTORICAL TRAUMA: AFRICAN AMERICANS AND THE "TUSKEGEE STUDY"

Native American populations have certainly suffered their fair share of trauma throughout their proud history but so have African Americans. The "Tuskegee Study" serves as an example of those traumatic experiences and is among the most often cited reasons for mistrust of medical care among African Americans.[188] The United States Public Health Service (USPHS) conducted the study focused on the progression of untreated syphilis in African American men. Government officials convinced the men that they were "receiving free healthcare when in reality they were being tested on like lab rats."[189] The Tuskegee Study took place in Macon County, Alabama.[190] Researchers have summarized the experiment as an "unethical and deadly experiment," which was one of the most "egregious examples of medical exploitation in United States history."[191]

For 40 years, between 1932 and 1972, the USPHS conducted experiments with hundreds of poor, African American men—the majority who were suffering from syphilis—to understand better the natural progression and "history of the disease."[192] During this event, the men were denied the required and essential treatment for their condition, which included being provided penicillin that became a standard healthcare

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[187] Substance Abuse and Mental Health Services Administration, *Tips for Disaster Understanding Historical Trauma When Responding to an Event in Indian Country*.

[188] Dwayne T. Brandon, Lydia A. Isaac, and Thomas A. LaVeist, "The Legacy of Tuskegee and Trust in Medical Care: Is Tuskegee Responsible for Race Differences in Mistrust of Medical Care?" *Journal of the National Medical Association* 97, no. 7 (2005): 951–56.

[189] Jamie Rose Hackett, "Mental Health in the African American Community and the Impact of Historical Trauma: Systematic Barriers," *Master of Social Work Clinical Papers*, 2014, http://sophia.stkate.edu/cgi/viewcontent.cgi?article=1322&context=msw_papers.

[190] Johns Hopkins Bloomberg School of Public Health, "Knowledge of Tuskegee Study Doesn't Increase Medical Mistrust," *Johns Hopkins Bloomberg School of Public Health*, June 30, 2005, http://www.jhsph.edu/news/news-releases/2005/brandon-tuskegee.html.

[191] Jesse Singal, "The Tuskegee Study Kept Killing People for Decades," Science of Us, accessed November 9, 2016, http://nymag.com/scienceofus/2016/06/tuskegee-experiment-mistrust.html.

[192] Ibid.

practice by the mid-1940s.[193] Not only were the men denied treatments, they were instructed not to seek the medical advice from any healthcare providers except the medical staff assigned to the study.[194] The men were exposed to "blood draws, spinal taps, and, eventually, autopsies, by the study's primarily white medical staff."[195] The men who were able to survive the study later reported that medical staff informed them that they had "bad blood" that required medical treatment.[196] For their participation, the men were provided hot meals, the appearance of relevant treatment, and funeral arrangements including burial costs. Jean Heller, of the *Associated Press*, provided details about the event in 1972.[197] The report described the deception involved with the study and the relationship to government-justified medical procedures (or the denial of healthcare) for the men involved in the event.[198] The issue was, by the time the report was released in 1972, most of men had died mostly from "syphilis-related causes."[199] Historical trauma has varied consequences and one of those is distrust. This governmental distrust impedes health practitioner's response to emerging threats. African Americans have dealt with traumatic experiences that impact trust and the "Tuskegee Study" serves as one of the prime examples.

Since the experiment, various public health researchers have noticed that when they interview African-Americans about their views on the health system, they will often bring up Tuskegee, unprompted. It left a deep scar on the country, yes, but on this population, in particular.[200] It is understandable, when surveyed, that many responded of their distrust in doctors, and particularly white doctors, which is easy to understand when the government allowed something this awful to happen.[201]

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193 Singal, "The Tuskegee Study Kept Killing People for Decades."

194 Ibid.

195 Ibid.

196 Ibid.

197 Ibid.

198 Ibid.

199 Ibid.

200 Ibid.

201 Ibid.

As discussed earlier, historical trauma carries across generations and mistrust that stems from situations directly or indirectly experienced should be considered. In December 1974, federal government officials agreed to pay $37,000 to any of the men who may have survived the study, as well as provided them with "lifetime medical benefits."[202] This "benefit" extended to their family members who may have also contracted illnesses related to syphilis.[203] Furthermore, government officials agreed to award $15,000 to the heirs of the men involved in the study.[204] Although the government felt they were working to "remedy the harms" committed during the Tuskegee experiments, officials failed to accept responsibility for their actions.[205] Decades later, in 1997, President Bill Clinton expressed a formal apology to the men and family members involved with the study, as well as to the "nation at large."[206] Outside of President Clinton's apology, it was the only circumstance where any government official or agency acknowledged its role in "the longest non-therapeutic experiment on human beings in medical history."[207]

As important and genuine President Clinton's address, the sad fact was it was too late for just a "simple apology."[208] The truth was government-managed health officials had committed "gross injustices against members of the African-American community."[209] By the time of the apology, populations across the country were overcome with widespread "distrust and suspicion" toward government officials, as well as those working in public health, healthcare, and medical professions.[210]

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[202] Singal, "The Tuskegee Study Kept Killing People for Decades."

[203] Abigail Perkiss, "Public Accountability and the Tuskegee Syphilis Experiments: A Restorative Justice Approach," *Berkeley Journal of African-American Law & Policy* 10, no. 1, art. 4 (January 2008), http://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=1086&context=bjalp.

[204] Ibid.

[205] Ibid.

[206] Ibid.

[207] Ibid.

[208] Ibid.

[209] Ibid.

[210] Ibid.

Significant research on the Tuskegee Experiment has been conducted by Marcella Alsan (Stanford Medical School) and Marianne Wanamaker (University of Tennessee) who contend that barriers and distrust still exist. In one publication, Dr. Alsan recalls being approached by a woman who recounted that she was eight years old after the Tuskegee Study when her family stopped going to her regular pediatrician. They decided to drive an hour to see a black doctor instead of having her continue to be seen by a white doctor.[211] Their research supports that a distrust of government and government managed healthcare still exists in black communities today which, in emergencies, present barriers. Understanding past experiences, such as Tuskegee, is important for practitioners working to establish and refine guidelines related to the medical ethics involved in caring for certain populations, particularly, as public health and healthcare practices continue to evolve in "the digital and genomic ages."[212]

E. HISTORICAL TRAUMA: ASIAN AMERICANS

Historical trauma impacts many populations, including Asian Americans. Asian Americans refer to those people in the United States who have their origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent (Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam).[213] Research supports that throughout U.S. history, racism has been prevalent towards Asian-Americans and Pacific Islanders.[214] Examples of this racism, social injustice, and oppression at the hands of the government are explained in this section.

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[211] Vann R. Newkirk II, "A Generation of Bad Blood," *The Atlantic*, June 17, 2016, http://www.theatlantic.com/politics/archive/2016/06/tuskegee-study-medical-distrust-research/487439/.

[212] Ibid.

[213] Dhara Thaka Meghani, Pratyusha Tummala-Narra, and Asian American Psychological Association, "Trauma and Violence Exposure among Asian American and Pacific Islander Children," *Nursing and Health Professions Faculty Research and Publications*, 2014, http://repository.usfca.edu/cgi/viewcontent.cgi?article=1072&context=nursing_fac.

[214] Gayle Y. Iwamasa, "Recommendations for the Treatment of Asian-American/Pacific Islander Populations," American Psychological Association, accessed November 11, 2016, http://www.apa.org/pi/oema/resources/ethnicity-health/asian-american/psychological-treatment.aspx.

For many Asian-Americans and Pacific Islanders, the sense of unity and community exist given their population has collectively experienced discrimination.[215] For many years, behavioral health researchers have documented the dynamics of "trans-generational psychological trauma" that exists among Asian-Americans and Pacific Islander populations.[216] For example, it has been well documented that during World War II, many Japanese-American children were held in internment camps on U.S. soil, which led to life-long psychological trauma stemming from experiences they had during the wrongful imprisonment.[217] The psychological impacts for these populations are compounded given many Asian-Americans and Pacific Islanders have relocated to the United States from "countries ravaged by war, famine, and economic and political upheaval."[218] As discussed earlier in this chapter, historical trauma is generational and although current generations may have not experienced the torture, rape, or other violent events bestowed upon their ancestors, the results of these psychologically traumatic incidents are passed down to them.[219] It is important to note that although the examples of historical trauma previously referenced occurred from outside of the United States, the inherited fear and distrust of government is germane to the situation.

F. ASIAN AMERICANS FEARING DEPORTATION

As the world grapples with its response to the Syrian refugee crisis, the question of what to do with another refugee community in the United States remains up for debate. Since 1975, over 1.2 million refugees fled war in Southeast Asia and resettled in America, making them the largest refugee group in U.S. history.[220] Despite their refugee status in the United States, some of those refugees, mostly those who were children or infants when they fled Asia, are being deported. More than 500 people have been deported from America to Cambodia since 2002 when the two countries signed a

[215] Iwamasa, "Recommendations for the Treatment of Asian-American/Pacific Islander Populations."

[216] Ibid.

[217] Ibid.

[218] Ibid.

[219] Ibid.

[220] Ibid.

repatriation agreement.[221] Over the past two decades, more than 13,000 Cambodian, Vietnamese, and Laotian Americans have been served deportation orders, according to the Southeast Asia Resource Action Center. Advocates say those communities live in constant fear of being relocated from their homes.[222] As refugees are sent back to countries from which they fled, some are saying that U.S. immigration policies are re-traumatizing their communities.[223] Struggling with post-traumatic stress disorder, and LEP, many refugees are vulnerable to poverty, crime, and violence.[224]

When it comes to considering the deportation of a refugee, the United States bears moral responsibility, particularly for those displaced by conflict in which the United States was involved.[225] The United States' war in Vietnam, and the bombing of Cambodia, played a significant role in the "displacement of refugees" from Southeast Asia.[226] As a result of this war, many were driven from their homes, without a choice, and left behind things many take for granted, such as language, culture, and the love, safety, and security that exists in U.S. families and across U.S. communities.[227]

G. HISTORICAL TRAUMA: ASIAN AMERICANS AND INTERNMENT CAMPS

Historical trauma within the Asian American population includes imprisonment on American soil as a result of World War II. In 1942, President Roosevelt instituted "Executive Order 9066."[228] Under this initiative, more than 120,000 people of Japanese descent residing in the United States were taken from their homes (and in most cases had

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[221] Iwamasa, "Recommendations for the Treatment of Asian-American/Pacific Islander Populations."

[222] Ibid.

[223] Ibid.

[224] Ibid.

[225] Ibid.

[226] Ibid.

[227] Justine Calma, "Forty Years after Resettlement, Thousands of Southeast Asian Refugees Face Deportation," *NBC News*, November 23, 2015, http://www.nbcnews.com/news/asian-america/forty-years-after-resettlement-thousands-southeast-asian-refugees-face-deportation-n466376.

[228] "World War Two—Japanese Internment Camps in the USA," last updated August 5, 2014, http://www.historyonthenet.com/ww2/japan_internment_camps.htm.

less than two days to do so) and relocated to government-managed internment camps.[229] The U.S. government condoned these actions by claiming that "there was a danger of those of Japanese descent spying for the Japanese."[230] The issue being, however, is that more than two thirds of those sent to the camps were American citizens with nearly half being children.[231] Of those detained, none were ever deemed to be "disloyal to the nation" and in most cases, family members were simply split-up and placed in different camps.[232] Evidence supports that over the entire war, only 10 individuals were found guilty of spying for Japan and all 10 persons were Caucasians.[233]

U.S. history supports that some people have thought of the internment camps as "concentration camps" while others view internment as "an unfortunate event, but a military necessity."[234] In 1988, Congress supported "Public Law 100-383," which recognized the "injustice of the internment," issued apologies for the activities and gave a $20,000 cash payment to each confined individual.[235] A stunning irony in the event was expressed by an internee who—when told that the Japanese were "put in those camps for their own protection"—answered, "If we were put there for our protection, why were the guns at the guard towers pointed inward, instead of outward?"[236] It can be assumed in a bio-terrorism or other public health emergency—particularly those that require a prevalent local, state, and federal law enforcement presence—the fear of deportation or internment from historical trauma perspectives are realistic.

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229 "World War Two—Japanese Internment Camps in the USA."

230 Ibid.

231 Ibid.

232 Ibid.

233 Ibid.

234 "Japanese Relocation during World War II," last reviewed October 3, 2016, https://www.archives.gov/education/lessons/japanese-relocation.

235 Ibid.

236 Ibid.

H. HISTORICAL TRAUMA: EXPERIMENTATION OF "THE PILL" ON PUERTO RICAN WOMEN

Native Americans, African Americans, and Asian Americans and other populations have certainly experienced racial demotion in varying ways and degrees.[237] All populations must be treated with dignity and decency by both the government-based public health workforce and the healthcare and medical establishment; unfortunately, certain events have fostered distrust, discontent, and disconnect among certain populations.[238] The following segment of this chapter provides examples of historic, unfortunate health-related events in Puerto Rico and their impacts on current-day public health and health care emergency planning and response practice.

The initial trials of the contraceptive pill began 62 years ago, and some Puerto Rican women remember the low ethical standards associated to these experiments. Researchers have compared these activities with the syphilis experiments in Tuskegee, Alabama, mentioned earlier in this chapter, given these tests were taking place around the same time.[239]

Scientists Gregory Pincus and John Rock began the first human trials of "the pill" in the United States (Massachusetts) in 1954.[240] The trials were conducted under the guise of "fertility treatments not as birth experiments." Further complicating the issue was the fact that the pill had severe side effects; thus, their difficulty in persuading U.S. women to participate in the trials. These and other challenges led the researchers to decide to target their tests to women living in Puerto Rico.[241] As the testing commenced, the scientists were able to recruit hundreds of women to test the pill, which at that time had "three times more hormones" than today's version that was later sold under the brand

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[237] Derek H. Suite et al., "Beyond Misdiagnosis, Misunderstanding and Mistrust: Relevance of the Historical Perspective in the Medical and Mental Health Treatment of People of Color," *Journal of the National Medical Association* 99, no. 8 (2007): 879–85.

[238] Ibid.

[239] Michael Cook, "50 Years On, Puerto Rico Remembers the Pill," BioEdge, April 16, 2004, http://www.bioedge.org/bioethics/50_years_on_puerto_rico_remembers_the_pill/7766.

[240] Ibid.

[241] Ibid.

name "Enovid."[242] Most of the Puerto Rican women in the study came from impoverished areas and deprived farming villages and had no idea that the study they were participating in was not also being conducted with women located on the United States mainland.[243] U.S. doctors targeted the remote town of Humacao, Puerto Rico, for the testing, and bitter feelings continue to simmer given the secrecy of the experimental nature of the pills dispersed in that area.[244] Some women recall doctors dressed in white lab coats who were once tasked with delivering their babies, only to later be the same physicians urging them to use the new drug.[245]

As a result of the study, two healthy women perished and no autopsies were ordered to evaluate the cause of their deaths.[246] Following the study, the pill was approved by the Federal Drug Administration (FDA) in 1960, but the Puerto Rican trials continued until 1964 because women in the United States were still suffering from side effects, such as "depression, acne and painful periods."[247] To this day, many Puerto Rican women continue to be outraged that they labeled "unwitting guinea pigs" by medical staff coming from the (mainland) United States. Research supports that the Puerto Rican women involved in the study were not informed that the pill was "experimental" or that "dangerous side effects" were likely.[248]

After the experiments, FDA officials admitted that the early trials of the drug were conducted without "informed consent," which is now mandatory and standard practice for new medications federally approved and distributed in the United States.[249] Evidence supports that although not apologizing for the way the trails were conducted, the FDA says that the experience resulted in "stronger rules" and served as the basis for a

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[242] Cook, "50 Years On, Puerto Rico Remembers the Pill."

[243] Ibid.

[244] Ray Quintanilla, "Puerto Ricans Recall Being Guinea Pigs for 'Magic Pill'," *Chicago Tribune*, April 11, 2004, http://articles.chicagotribune.com/2004-04-11/news/0404110509_1_gritty-village-pill-humacao.

[245] Ibid.

[246] Ibid.

[247] Cook, "50 Years On, Puerto Rico Remembers the Pill."

[248] Ibid.

[249] Ibid.

law "requiring every participant to be fully informed of the scope of tests before agreeing to participate" in medical or healthcare-related studies.[250]

I. HISTORICAL TRAUMA: MILITARY WEAPONS TESTING IN PUERTO RICO

Governmental experiments leading to distrust and poor health outcomes amongst the Puerto Rican population is not isolated to "the pill." Puerto Rico, a U.S. commonwealth, has historically been "subjected to abuse by foreign powers intent on exploiting its rich resources," which involves activities just east off of the island called "Vieques."[251]

Over 100 years ago, in Puerto Rico, the United States executed a military government when it was held by the Spanish.[252] Between 1941 and 2003, the U.S. military used the landmass of Vieques as "target practice," which has resulted in negative health-related outcomes for the near 6,000 people living on the island.[253]

In 2003, the U.S. Navy halted military operations on the island but left behind years of damage caused by "gunnery practice and test bombings."[254] Research supports that the consequences and realties stemming from these activities are severe. Furthermore, the health impacts are especially concerning given the cancer rates among islanders continue to increase and the ecological damage to the island, resulting in health issues, are still on the rise.[255] For example, testing of weapons has occurred "containing various chemicals and heavy metals" known to be "detrimental to the public health" of populations living in Puerto Rico.[256] Although illegal, evidence supports that U.S. soldiers have fired used uranium shells onto the island as part of their standard training

[250] Cook, "50 Years On, Puerto Rico Remembers the Pill."

[251] "Clearing Out without Cleaning Up: The U.S. and Vieques Island," May 19, May 19, 2011, http://www.coha.org/clearing-out-without-cleaning-up-the-u-s-and-vieques-island/.

[252] Ibid.

[252] Ibid.

[253] Ibid.

[254] Ibid.

[255] Ibid.

[256] Ibid.

missions.[257] The results of these trainings, however, pose serious health concerns given the abandoned shells eventually oxidize and release deadly radioactive materials that are carried throughout the region via wind and water.[258] These materials pose a significant health risk once ingested by humans given their vulnerabilities to "large doses of radiation."[259] Research supports that the cancer rate of those living in Vieques to be "27 percent higher" than those residing in any other part of Puerto Rico because of these activities.[260]

Of particular alarm are the health concerns involved, and again, U.S. government distrust given the unprecedented testing of toxins in Puerto Rico, such as Agent Orange.[261] It is well documented that the Navy tested the effects of Agent Orange on the island of Vieques during the Vietnam War.[262] The agent has been blamed for numerous health issues including "birth defects in children," whose mothers were exposed to the deadly chemical.[263] Evidence supports that veterans who ingested Agent Orange during their deployments have faced increased rates of "cancer, nervous system disorders and respiratory problems" as a result of the exposures.[264] On the island, research supports that Vieques residents report the following health issues: "high rates of asthma, skin problems, kidney failures and heart irregularities."[265]

In summary, populations living in Vieques have been exposed to decades of dangerous chemicals, frequently distributed by the U.S. Navy.[266] Although the cases and health consequences of those activities continue to surface, the U.S. government will not

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[257] "Clearing Out without Cleaning Up: The U.S. and Vieques Island."

[258] Ibid.

[259] Ibid.

[260] Ibid.

[261] Ibid.

[262] Ibid.

[263] Ibid.

[264] Ibid.

[265] Ibid.

[266] Ibid.

take responsibility.[267] The Navy claims the "toxic contamination of Vieques" was not due to their military activities but the impacts are due to "natural geologic occurrences;" therefore, excusing them from any obligation to "clean up or provide medical assistance to residents."[268] A certain lawyer, representing many islanders in a lawsuit challenging the U.S. government, sums up the situation in this way, "You cannot walk down the street on this island without counting every house and knowing two or three people on the street that have cancer, or have had cancer, or have died from cancer."[269]

J. HISTORICAL TRAUMA: FEAR AND DISTRUST

Fear and distrust of government officials and their actions represent significant challenges in the response to varied emergent events, including the lack of confidence in government agencies to assist minority populations in disasters.[270] Communicating and coordinating messaging with the public during emergencies can be difficult. Public health events, such as unfamiliar, unidentified, or intentionally released agents pose even greater communication challenges for health practitioners and their partners.[271]

Historical experience and evidence support that these threats have a "powerful potential to generate fear, cause negative behavioral responses such as social stigma, and undermine confidence in social institutions."[272] These veracities impede efforts to manage an emergency, such as a bio-terrorism incident or emerging health threat partnered with varied socioeconomic barriers, such as language, culture, and the realities of historical trauma.[273]

According to a study sponsored and funded by the CDC between 2002–2006, results supported that the populations across the United States question the "capacity and

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[267] "Clearing Out without Cleaning Up: The U.S. and Vieques Island."

[268] Ibid.

[269] Ibid.

[270] Ricardo J. Wray et al., "Communicating with the Public about Emerging Health Threats: Lessons from the Pre-Event Message Development Project," *American Journal of Public Health* 98, no. 12 (2008): 2214–2222.

[271] Ibid.

[272] Ibid.

[273] Ibid.

readiness of local, state, and federal governments to handle terrorist disasters" and the results were reflective of past survey and qualitative research findings.[274] The study also validated published findings that suggest that "distrust of the government" is more prevalent among minority communities who fear unequal treatment in a disaster.[275] Furthermore, results were reflective of another study conducted showing that honesty in a government response to an emergency incident is essential to establishing and nurturing trust within and across U.S. communities and populations.[276]

Research supports that emerging health threats produce strong emotional reactions, such as anxiety, shock, hostility, fear, and distrust.[277] Historical trauma—and the fear and distrust associated with it—present significant barriers that impede response to emerging health threats. Research supports the need of emergency planners and responders to re-examine their plans, protocols, and procedures closely, and take appropriate actions to ensure policies and planning elements take language and cultural barriers, as well as historical trauma, into account. The results of these actions will help protect varied populations and save more lives in communities impacted by emergencies across the country. Some recommendations for bridging these gaps are provided in the final chapter of this thesis.

Thus far, certain socioeconomic barriers—and associated challenges, such as fear and distrust—have been discussed in this thesis. The following chapter, the SARS/Canada Case Study, examines how isolation and quarantine and emergency risk communication practices were initiated and managed during the 2003 SARS outbreak event in Canada. This chapter analyzes responses and approaches taken by Canadian healthcare workers and their partners to mitigate the additional spread of the disease across their communities. The research gathered in the following chapter is intended to

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[274] Wray et al., "Communicating with the Public about Emerging Health Threats: Lessons from the Pre-Event Message Development Project," 2214–2222.

[275] Ibid.

[276] Ibid.

[277] Ibid.

assist health and healthcare practitioners in the United States if a similar disease—with similar or more severe impacts—were to impact the homeland.

V. SARS AND CANADA CASE STUDY

A. INTRODUCTION

The purpose of this chapter is to evaluate the Canadian public health practitioner's SARS isolation and quarantine practices with respect to socioeconomic factors, and consider applying their most relevant lessons learned in the United States to assist both public health and healthcare practitioners in their approach to future public health emergencies and threats. It examines experiences associated with the SARS event to "highlight the broad legal and policy challenges in preparing for an outbreak of infectious disease or similar public health emergency."[278] The Canadian public health workforce dealt with varied, historic, socioeconomic barriers (language, culture, and historical trauma), yet statistics and data supports their quarantining protocols were successful and the perceptions of those segregated that they did not feel wrongfully imprisoned.[279]

The chapter is based on an analysis of the "history of quarantine and isolation, relevant U.S. laws, and the roles of various governmental bodies in infectious disease control."[280] It also outlines lessons learned from Canada, which was impacted by the SARS outbreak along with China, Hong Kong, Singapore, Taiwan, and Vietnam.[281] The research supports three key categories that public health officials and other policy and decision makers need to consider when considering improvements to public health quarantine dynamics within the homeland. They include (1) legal and public health systems (which could include the interaction and disentangling of the legal system and the public health system, (2) public health and healthcare infrastructure (such as determining the roles and responsibilities of the public health and healthcare workforce and the ethical dynamics involved, and (3) law enforcement and ancillary services (such

[278] Tomislav Svoboda et al., "Public Health Measures to Control the Spread of the Severe Acute Respiratory Syndrome during the Outbreak in Toronto," *New England Journal of Medicine* 350 (June 3, 2004): 2352.

[279] Ibid.

[280] Ibid.

[281] Mark A. Rothstein et al., *Quarantine and Isolation: SARS Compiled Lessons Learned* (Louisville, KY: Institute for Bioethics, Health Policy and Law, University of Louisville School of Medicine, 2003), http://biotech.law.lsu.edu/blaw/cdc/SARS_REPORT.pdf.

as looking at re-aligning policing activities to meet the needs of the health emergency, which could include the delivery of food and medicine to those quarantined, homebound populations). These broad lessons learned provide the foundation for alternatives in planning and preparing the United States for a serious outbreak of an infectious, disease, such as SARS or a similar public health emergency.[282] Research supports that the U.S. public health and hospital workforce could learn from and improve their planning and response tactics based on Canada's approach in working with the SARS outbreak from 2002–2003.

Containment of a deadly disease, such as SARS, is imperative, as the impact not only affects the general population but front-line healthcare providers who through exposure during caring for others end up being intensive care patients themselves.[283] This chapter provides strategies to implement changes in policies and governance to help protect both the general and healthcare workforce populations in the United States.

B. BACKGROUND

1. What is SARS?

SARS is a highly pathogenic form of pneumonia that originated in the Guangdong Province of China in 2002.[284] In early 2003, the infectious disease was discovered in many countries and was being passed person to person via carriers traveling on international flights.[285]

Medical science supports that the main symptoms of SARS include "a high fever (over 38 degrees Celsius) and respiratory problems, including dry cough, shortness of breath or breathing difficulties."[286] Furthermore, the disease is spread through tiny

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[282] Rothstein et al., *Quarantine and Isolation: SARS Compiled Lessons Learned*.

[283] Institute of Medicine et al., ed., *The Impact of the SARS Epidemic Preparing for the Next Disease Outbreak—Workshop Summary (2004)* (Washington, DC: National Academies Press (U.S.), 2004), http://www.ncbi.nlm.nih.gov/books/NBK92486/.

[284] Ibid.

[285] Ibid.

[286] Ibid.

droplets released into the air, as well as through "contact with contaminated surfaces."[287] The SARS event impacted populations across the globe. Almost 8,100 people became ill from the disease between November 2002 and July 2003, and included either "pneumonia or respiratory distress syndrome."[288] Of the nearly 8,100 cases, 774 people died and by July 2003, no new cases of SARS were reported and the WHO declared the worldwide outbreak to be over.[289] Only eight persons in the United States were "laboratory-confirmed" as having SARS with the United States reporting zero "SARS-related deaths" and all eight of the individuals who tested positive had traveled to countries where the SARS virus was prevalent.[290]

2. Isolation and Quarantine

This chapter mentions both isolation and quarantine that according to CDC, "help protect the public by preventing exposure to people who have or may have a contagious disease."[291] It is important for health responders and their partners to understand the definitions of the two potentially life-saving activities, isolation and quarantine. According to CDC, **isolation** "separates sick people with a contagious disease from people who are not sick" while **quarantine** "separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick."[292]

In Toronto, many people representing many disciplines were faced with very difficult decisions as a result of the SARS cases impacting their populations. These disciplines included practitioners of the health and medical fields, local, provincial, and federal government organizations and the general public.[293] During the SARS outbreak,

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[287] Institute of Medicine et al., ed., *The Impact of the SARS Epidemic Preparing for the Next Disease Outbreak—Workshop Summary (2004)*.

[288] "Frequently Asked Questions about SARS," last updated July 2, 2012, http://www.cdc.gov/sars/about/faq.html.

[289] Ibid.

[290] Ibid.

[291] "Quarantine and Isolation," last updated January 19, 2017, http://www.cdc.gov/quarantine/index.html.

[292] Ibid.

[293] Benatar et al., "Ethics and SARS: Learning Lessons from the Toronto Experience."

some Canadians were forced to assess difficult situations and make difficult decisions with very limited information and with very little time to do so. Research states that the most affected group during the SARS outbreak—the same people on the firing line—were the workers in the health care community.[294]

Outbreaks have happened throughout history. History states that in the Middle Ages—when the plague was spread between Asia and Western Europe—it took over three years to travel from one area to the other. During the SARS event, the disease spread from Hong Kong to Toronto in less than 15 hours.[295] Many health professionals consider SARS as the most widely and quickly spreading infectious disease via travel of infected humans in recent history.[296] Thus, many may ask who then is responsible for the spread of disease within and outside of borders? Although local, state, and federal health agencies are ultimately accountable for maintaining public health and health safety matters, both isolation and quarantine remain a politically polarized topic impacting states' willingness to address the issue as it could be very unpopular with the voting public.[297] For instance, under Section 361 of the Public Health Service Act (42 U.S. Code § 264), the U.S. Secretary of Health and Human Services is authorized to take appropriate measures to prevent the "entry and spread of communicable diseases from foreign countries into the United States and between states."[298] Although infrequently enacted, these control measures can and have included isolation and quarantine.[299]

Over time, the United States has become less restrictive when it comes to isolation or quarantine issues, and due to this stance, the United States could have a problem.[300] The inconsistency of quarantining amongst states, paired with the varied or

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294 Benatar et al., "Ethics and SARS: Learning Lessons from the Toronto Experience."

295 Ibid.

296 Tikki Pang and G. Emmanuel Guindon, "Globalization and Risks to Health," EMBO Reports 5 (Suppl 1) (October 1, 2004): S11–16, doi: 10.1038/sj.embor.7400226.

297 "State Quarantine and Isolation Statutes," October 29, 2014, http://www.ncsl.org/research/health/state-quarantine-and-isolation-statutes.aspx.

298 Ibid.

299 "Legal Authorities for Isolation and Quarantine," accessed October 8, 2014, http://www.cdc.gov/quarantine/aboutlawsregulationsquarantineisolation.html.

300 Ibid.

non-existent implementation strategies and practices for those states looking to strengthen said practices, leads to a lack of "buy-in" and a lack of trust from those quarantined, particularly those from minority populations. The researcher contends if upmost respect is extended and conditions are made a priority for the care of those quarantined (and their families); the United States would have a better chance to implement and enforce quarantine guidelines. The researcher's belief is supported by the examples provided in the SARS outbreak in Canada.

During the 2002–2003 SARS outbreak, the Canadian government issued mandatory quarantining.[301] It is important to note, however, that before relying on any health agencies legal power to do so, practitioners must recognize the importance of the public's "will" to fight an infectious disease scenario impacting their populations. Without the public's cooperation, laws that sit "on the books" are all but useless.[302] The United States can learn from and apply lessons learned during the SARS outbreak in Canada. These lessons learned, if implemented and evaluated for effectiveness and efficiency, could support a revised approach to quarantining practices in the homeland. The next section details key practices and lessons learned during the SARS outbreak (and analyzes the effectiveness of those healthcare practices) during a severe, deadly outbreak impacting Canadian (and potentially American) populations.

C. THE CASE STUDY

A major U.S. study was conducted following the SARS quarantine in Toronto. Various means of data collection were used, such as "interviews, telephone polls and focus groups."[303] The results of the study concluded that "civic duty, not fear of legal consequences" served as the primary motivator for individuals quarantined as a result of the event.[304]

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301 "Legal Authorities for Isolation and Quarantine."

302 Ibid.

303 Svoboda et al., "Public Health Measures to Control the Spread of the Severe Acute Respiratory Syndrome during the Outbreak in Toronto," 2352.

304 Ibid.

Furthermore, overall, evidence supports that fear of "running afoul of the law" had little to do with quarantine compliance.[305] Of the 68 "General Population Survey" participants issued quarantine orders, no one responded that their primary motivation for complying was to avoid "enforcement measures" and penalties.[306] Thus, what generated this remarkably high percentage of those naming "civic duty" as their primary reason for accepting quarantining orders? Although SARS cases occurred outside of the healthcare provider arena, three primary reasons could explain why these responses were so high in Canada.

First, Canada has a publicly-funded healthcare system, unlike the United States, which likely helped promote quarantine compliance in response to the SARS' outbreak. Secondly, the public overwhelmingly cooperated during the event, which was hailed by professionals at the CDC. An expert from the CDC in an interview with the Canadian Health Commission added, "We are all forever grateful for that fact that when you did this, you treated your Canadian citizens with dignity and respect and a lot of people are starting to write on this in academia . . . The way you preceded appeared to be transparent. It appeared to be open and I think it worked. The data is stunning."[307]

Lastly, the Canadian government has established a public relationship built on trust. As referenced earlier, practitioners must respect and work to engage with the public to ensure the healthiest outcomes from outbreaks, such as SARS.[308] The public's cooperation is reliant on the general understanding of what is required of them related to disease control and prevention measures through voluntary quarantine. Public messaging is essential and can only be accomplished when populations are constantly kept informed by health information officers. Ensuring timely messages are delivered to entire populations helps establish and grow trust of government health practitioners responding

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[305] Svoboda et al., "Public Health Measures to Control the Spread of the Severe Acute Respiratory Syndrome during the Outbreak in Toronto," 2352.

[306] Ibid.

[307] Ministry of Government and Consumer Services, *Second Interim Report, SARS Public Health Legislation, 8 Quarantine* (Ontario: Ministry of Government and Consumer Services, n.d.), 300–326, accessed August 27, 2016, http://www.archives.gov.on.ca/en/e_records/sars/report/v5-pdf/Vol5Chp8.pdf.

[308] Ibid.

to varied outbreaks impacting communities.[309] These key practices—supporting an overall positive response by the health community in treatment of healthcare workers—highlight the essential poignant improvement goals for healthcare workers in the United States caring for their peer healthcare workers in response to emerging public health threats.

In addition to responses citing quarantine as their civic duty; many shared their trust in the Canadian healthcare workforce. As is known, fear and distrust of public health and emergency response officials in disasters can and have had dire consequences, such as those documented experiences stemming from Hurricane Katrina.[310] Evidence supports that during the SARS outbreak, populations across Toronto, generally, trusted the "judgment and expertise" of the Canadian Chief Medical Officer of Health.[311] It is important to note that the public will not follow any "expert" regardless of the power they may have unless trust is established and the communities trust their motives, as well as their knowledge and skillsets.[312]

Complementing the survey conducted in Toronto, the U.S. based group, Trust for America's Health, distributed a survey in 2007 to evaluate isolation and quarantine practices in the United States as a result of the SARS event.[313] Survey results reflected that nearly 9 out of 10 Americans would agree to a "voluntary quarantine" order and much like the Canadians surveyed, considered quarantining practices as their "civic duty" to help control the spread of infectious disease across U.S. communities.[314] Interestingly, of the 10 percent who responded that they would not obey a government issued voluntary quarantine, 64 percent shared their reason was due to fear of losing needed income with missing work while 39 percent responded their reason for non-compliance was fear of

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309 Ministry of Government and Consumer Services, *Second Interim Report*, 300–326.

310 Enrique Rivero, "Hurricane Katrina Evacuees Had Deep Distrust of Public Health Authorities, UCLA Study Finds," *UCLA Newsroom*, May 1, 2007, http://newsroom.ucla.edu/releases/Hurricane-Katrina-Evacuees-Had-7896.

311 Ministry of Government and Consumer Services, *Second Interim Report, SARS Public Health Legislation, 8 Quarantine*.

312 Ibid.

313 "State Quarantine and Isolation Statutes."

314 Ibid.

losing their jobs altogether.[315] This type of support was provided for in Canada, where Toronto Mayor Lastman assisted Canadian businesses and their public as a result of the outbreak, and may be one of the contributing factors to their success.[316]

D. FEAR AND OTHER IMPACTS EXPERIENCED DURING SARS

Effective response examples have been presented in this policy memo and although quarantine efforts were deemed a success and were on the broad scale effective in addressing the possibly of wider spread of the disease, public panic, distrust or reluctance among cultures can exist, which was, in part, a reality during SARS with fear, stigmatization, and even discrimination taking place during the outbreak.[317]

In American cities, fear seemed to spread quicker than SARS itself, and for Asian Americans, the outbreak was particularly difficult for reasons other than direct exposure, as rumors were "frantic and virtually impossible to contain."[318] In New York's Sunset District, some locals gossiped that the owner of a thriving dim sum restaurant in their city was suffering from SARS. In Seattle, rumors were floating around that two employees at a neighborhood grocery store had come down with the disease. Meanwhile, in Honolulu, residents gossiped that a worker at a popular "roasted-meats" shop in Chinatown was sick from SARS. In reality, none of the reports were true but that did not seem to matter. Their businesses were crippled as harshly as "if there were a boycott."[319] The same situations occurred in San Francisco, as shops and restaurants felt shunned by their customers until a "top county health official" appeared downtown one day and reassured them they were safe.[320] After the event, many shop and restaurant owners declared "ethnic stereotyping"

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315 "State Quarantine and Isolation Statutes."

316 Ibid.

317 Bobbie Person et al., "Fear and Stigma: The Epidemic within the SARS Outbreak," *Emerging Infectious Diseases* 10, no. 2 (February 2004): 358–63, doi: 10.3201/eid1002.030750.

318 Jennifer 8. Lee, Dean E. Murphy, and Yilu Zhao, "The SARS Epidemic: Asian-Americans; In U.S., Fear Is Spreading Faster than SARS," *The New York Times*, April 17, 2003, http://www.nytimes.com/2003/04/17/world/the-sars-epidemic-asian-americans-in-us-fear-is-spreading-faster-than-sars.html.

319 Ibid.

320 Ibid.

had occurred and attributed their losses to irrational and scared tourists who simply stayed away from Asian-American businesses in the city.[321]

In contrast, during SARS, the Canadian workforce focused on clear, timely information, which assisted in the response to the outbreak and the public's reactions to the event, but even Canada had its fair share of fear resulting in negative economic impacts. The then Toronto Mayor Lastman stated, "The businesses are hurting, they're hurting bad."[322] "People's lives are being adversely affected by both the disease and public perception of the crisis."[323] To lessen the impact, Canada earmarked funds to assist impacted businesses. Toronto joined Ontario in securing $10 million dollars for a promotion campaign intended to gain the public's trust that Toronto was a safe place to visit. These cities partnered with the Canadian federal government to accomplish varied promotion efforts, all of which were deemed successful. The United States did not take any of these measures.[324]

Addressing fear and discrimination toward individuals infected or impacted by infectious disease serves as one the primary ways to control further transmission.[325] Research states that individuals who are "feared and stigmatized" may not seek needed care to remain anonymous in their community. Although it is safe to say that these impacts and emotions did not impact entire populations, Asian-American communities were particularly affected during the SARS outbreak that impacted countries across the globe.[326] During this outbreak, Asian populations were discriminated against, as some people were "fearful or suspicious" of them being a carrier of the virus and expected them to be removed and quarantined.[327] Based on the lessons learned from the event, the

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[321] Lee, Murphy, and Zhao, "The SARS Epidemic: Asian-Americans; In U.S., Fear Is Spreading Faster than SARS."

[322] Clifford Krauss, "The SARS Epidemic: Canada; Toronto Mayor Calls for Understanding from Businesses and Consumers," *The New York Times*, April 25, 2003, http://www.nytimes.com/2003/04/25/world/sars-epidemic-canada-toronto-mayor-calls-for-understanding-businesses-consumers.html.

[323] Ibid.

[324] Ibid.

[325] Ibid.

[326] Ibid.

[327] Ibid.

following section outlines policy recommendations deemed a priority for the Canadian public health workforce and provide policy foundations to address future emerging public health threats in the United States.

E. POLICY RECOMMENDATIONS FOR THE UNITED STATES (BASED ON THE SARS OUTBREAK IN CANADA)

As expressed throughout this chapter; establishing and maintaining trust is paramount, as is community outreach and engagement. Ensuring that both response plans and response actions maintain community trust and community outreach will promote effective and efficient response to public health emergencies, such as those realized during the SARS outbreak. Five major recommendations were derived from the facilitated group discussions with key informants following the event, and although specific to the SARS outbreak, they can be modified slightly to address future communicable disease scenarios for the United States, which include but are not limited to this highly-contagious respiratory illness.[328] The five recommendations are as follows:

- Develop simple, tailored SARS prevention messages
- Develop SARS information materials in various Asian languages
- Disseminate SARS information through multiple and culturally appropriate channels, including (but not limited to) community visits, town hall meetings, and health education and communication channels to complement mass media messages
- Establish partnerships with local Asian-American community-based organizations to educate the public
- Ensure that the CDC would continue to provide leadership and coordination in preventing and controlling SARS.[329]

Additionally, three key practices need to be strengthened by the United States based on lessons learned and key practices associated with the Canada SARS event.

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[328] Krauss, "The SARS Epidemic: Canada; Toronto Mayor Calls for Understanding from Businesses and Consumers."

[329] Ibid.

1. Legal and Public Health Systems—Quarantine and Isolation

To respond promptly and effectively to SARS, affected countries, such as the United States, will need "public health laws that establish a mechanism for regulating travel into and out of the affected areas."[330] These measures include "case surveillance, reporting and analysis," as well as a consistent and germane plan for quarantine and isolation practices.[331] Furthermore, the United States needs the political will to enforce these measures and additional studies are needed to determine if incentives or penalties are effective in promoting compliance with quarantine.[332]

U.S. laws have to account for flexibility to allow for the incident appropriate responses to new and emerging public health threats.[333] In addition, U.S. public health officials need receive training and a base understanding of the "statutory and regulatory procedures for invoking authority for quarantine and isolation" activities, and when necessary, the triggers necessary to enact such measures when necessary.[334] Health officials need to account for ethical and civil liberty concerns with regards to initiating quarantining protocols.[335] Evidence supports that although quarantining can be very effective, practitioners need to consider all factors carefully and be prepared to defend their decision to enforce quarantine orders once they are initiated in their jurisdictions.[336]

2. Public Health and Health Care Infrastructure—Stockpiling of Medications, Supplies, and Equipment

Quarantine and isolation is challenging for any jurisdiction to implement. Canada relied on its public health infrastructure to "coordinate the public health response among

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330 Rothstein et al., *Quarantine and Isolation: SARS Compiled Lessons Learned*.

331 Ibid.

332 Ibid.

333 Ibid.

334 Ibid.

335 Ibid.

336 Mark A. Rothstein, *From SARS to Ebola: Legal and Ethical Considerations for Modern Quarantine* (Indianapolis, IN: Indiana University, Robert H. McKinney School of Law, n.d.), accessed September 18, 2016, https://mckinneylaw.iu.edu/ihlr/pdf/vol12p227.pdf.

all levels of government domestically and internationally."[337] Public health practitioners also coordinated their efforts with their partner healthcare providers to ensure sufficient staffing levels and adequate "facilities, equipment, and medications" were available to minimize the toll from the SARS outbreak.[338] Following the event, the CDC's strategic national stockpile (SNS) expanded its inventory of ventilators and other essential supplies and equipment, but improved logistics planning remains a gap. Besides the stockpiled products available through public health and at healthcare facilities, Canada distributed a vast amount of critical medical supplies straight to the impacted populations. The benefits from this direct community-based outreach are clearly connected and are supported through feedback from those impacted and grew an already established, strong element of trust between government-based response entities and the Canadian public.[339] Admittedly, the United States does not have Canada's national healthcare system but strategically reaching back into its private medical systems to improve outreach efforts remains an important but under-explored option. Supporting this effort would mean that the DHHS or the CDC would work in partnership, via the establishment of memoranda of understanding (MOUs) that would be enacted in times of health emergencies allowing them to do whatever is deemed appropriate to assisting in the response activities to outbreaks, such as SARS.

3. Law Enforcement and Ancillary Services—Isolation and Quarantine Enforcement Considerations

Successful initiation of quarantine and isolation practices among impacted countries required both ancillary and logistical support.[340] This support included partnership with law enforcement to help "ensure compliance, wage replacement systems, delivery systems for food and medical supplies."[341] Law enforcement officials

[337] Rothstein, *From SARS to Ebola: Legal and Ethical Considerations for Modern Quarantine.*

[338] Ibid.

[339] Ibid.

[340] Ibid.

[341] Ibid.

also assisted with public instruction and communication activities not only to provide education but gain the support and trust of the public.[342]

Although shifting from their primary roles, law enforcement served as a critical partner to health and healthcare practitioners during the SARS event.[343] The lesson learned from Canada was that traditional law enforcement activities were altered. A different kind of police presence, such as distributing food and conducting health and wellness checks, took place providing positive impacts during and after the event. As referenced earlier, Canada experienced a high amount of "voluntary compliance" pertaining to quarantining efforts but it remains unclear if that would be replicated in the United States given its "cultural notions of individuality, due process, and skepticism of government."[344] Moving forward, populations consisting of varied "racial, ethnic, religious, linguistic and cultural groups" should be included in the quarantine planning process to ensure specific needs of each group are established in advance of an infectious disease incident, such as SARS. Policies stemming from the Canadian health workforce could assist the United State in addressing the need to ensure what is feasible and infeasible based on individual or family conditions and ensuring that law enforcement is trained and aware of these policies and practices to assist in overcoming skepticism.[345] These recommendations implemented in part or whole will assist in the planning and response activities associated with addressing emerging public health threats impacting the homeland.

The next and final chapter of this thesis offers a way forward. The "Recommendations and Conclusion" chapter provides practitioners guidance to assist them in their efforts to "bridge the gap" that exists in communities to help ensure that entire populations have the best chance to survive bioterrorism incidents or widespread infectious disease outbreaks.

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[342] Rothstein, *From SARS to Ebola: Legal and Ethical Considerations for Modern Quarantine.*

[343] Ibid.

[344] Ibid.

[345] Ibid.

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VI. RECOMMENDATIONS AND CONCLUSION

The first step toward change is awareness. The second step is acceptance.[346]

A. RESULTS

The basis for this research topic stems from certain local and state PHEP grant activities—managed by the CDC—focused on jurisdictions' ability to dispense life-saving medications and medical supplies to 100 percent of an impacted population within 48 hours of a bioterrorism incident.[347] Managing the state medical countermeasure program for many years, the researcher felt it was important to examine barriers that local and state public health practitioners face in their missions to provide emergency medications, healthcare, or other services as a result of widespread infectious disease outbreaks and bioterrorism incidents.

He questioned how it would be possible for health practitioners to reach entire impacted populations within 48 hours when socioeconomic barriers, fear, and distrust of government exist in communities. The purpose of the research was to understand better the extent of these barriers—the significance and relevancy of the barriers—and how they impede response to emerging health threats. Many socioeconomic barriers and affiliated challenges need to be considered but his research was based on three primary "pillars" associated to the SDOH, which are (1) language, (2) culture, and (3) historical trauma.[348] His findings centered around the barriers—along with contributing factors, such as fear and distrust of government—to understand their connection or disconnection to health emergencies better. The results gathered, and the data, analyzed, presented a much larger problem space than anticipated.

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346 Nathaniel Branden, "The First Step toward Change Is Awareness. The Second Step Is Acceptance," *Psychology*, October 16, 2015, http://fyp-psychology.com/post/131282177470/quotes-nathaniel-branden-the-first-step-toward-change.

347 "Cities Readiness Initiative Strategic National Stockpile."

348 "Social Determinants of Health: Know What Affects Health."

Before researching this topic, when considering the CDC's model of providing medications and healthcare to 100 percent of a population within 48 hours of a dire health emergency, the researcher predicted a more realistic percentage would be the ability to reach 80–90 percent of a population in that timeframe. After researching barriers across the United States that language, culture and historical trauma present—along with fear and distrust of government—the percentage significantly dropped. It became more realistic that reaching 60 percent of community populations within the critical time period for emergency antibiotics to be effective is more accurately the baseline from which public health and healthcare practitioners should work. It became more and more apparent as he researched this subject matter that both the gaps—and the impacts that stem from these gaps—have been vastly underestimated in this nation's current operational and strategic planning and response practices.

During this research project, the researcher expanded upon the CDC-managed CRI program, which focuses on bioterrorism incidents; specifically, response capabilities by public health and their partners in the event of a weaponized, aerosolized anthrax event. He quickly realized the importance of applicability to other emerging health emergencies, as well as the risks and impacts stemming from a bioterrorism attack. Researching and analyzing the dynamics involved using a "60/40" lens provided a better understanding as to the root causes of certain behaviors, or a lack of behaviors, by some populations when faced with health emergencies. Although public health emergency practitioners may assume or predict that their plans will reach 100 percent of a population, the findings of this research supports that a more realistic starting point is practitioners will only reach 60 percent of a population and 40 percent will not receive the care needed to survive certain health emergencies or natural disasters based, in part, by the factors presented in this thesis.

In short, before researching these barriers—and their associations to health emergencies—the researcher never would have guessed the gap or problem space was this severe and this project found evidence of these gaps in all regions across the United States. Although "bridging the gap" may seem impossible for health professionals and their partners, failure to address these interwoven barriers will have both short- and long-

term negative consequences. Besides the increased morbidity and mortality rates (health impacts) across populations, the failure to understand and address barriers more directly will further widen the gap that currently exists between U.S. populations. Violence can certainly be expected as a result of thoughts of preferential treatment resulting in longer-term community and governmental dividedness across the homeland. He deemed it critically important to analyze the gap, the problem space, and help ensure public health emergency planning and response policies and protocols accurately account for these gaps to minimize morbidity and mortality rates across sub-populations as a result of a widespread health emergency or bioterrorism attack.

The researcher's first socioeconomic barrier examined how language challenges impede a response to emerging health threats and the realities that LEP presents to health professionals and their partners. For example, the highly ethnically diverse City of Los Angeles has approximately 224 languages spoken and less than 50 percent of the population lists English as their first language.[349] Have planners accounted for translation services for even a fraction of these languages? He also found that DHH populations provide unique challenges to health practitioners; and few PHEP planning documents reference outreach and communication strategies for DHH persons in their communities. Language, alone, begins the gap-widening process, but as referenced throughout this thesis, many barriers are interwoven not separate entities from one another. He found that a significant percentage of this nation's "whole community" populations have a blend of varied socioeconomic barriers that has and certainly can continue to impede U.S. response efforts to varied health emergencies.

Chapter III explored cultural barriers and their relevance to emerging health threats. The researcher learned that populations react, respond, and recover based on their individual and group experiences associated with their culture.[350] Furthermore, he discovered that some cultures deem government assistance as "charity" and may view government aid as dishonorable.[351] Many populations feel they need to take care of

[349] "Los Angeles—Speaking the Language."

[350] New Jersey Preparedness Training Consortium, *Cultural Impact Overview.*

[351] Ibid.

themselves and their families, in any situation, without the government stepping in to provide help.[352] He also learned that cultural barriers can be addressed through increased community outreach to establish and maintain trust with varied, diverse populations. It is this critically important outreach prior to incidents that provide the best chance for more of this nation's populations to survive bioterrorism or other health emergencies occurring in U.S. culturally diverse communities.

Chapter IV explored many aspects of historical trauma. This topic, by far, was the most "eye-opening" chapter in this thesis and provided insight relative to certain, substantial, past and recent government-managed incidents impacting the psycho-social aspects of certain populations. Research revealed the connection between historical trauma and the fear and distrust that exists between sub-populations and local, state, and federal governmental workforce. The researcher found that this distrust exists for several reasons, and how specific governmental impacts and actions against certain populations have increased the gap that needs bridged to respond effectively to health emergencies in the United States. One of the populations discussed in the chapter was that of Native American communities and some of the trauma they have experienced at the hands of the government throughout their history. For example, a 1974 study concluded that as many as 42 percent of all Native American women of childbearing age had, in 1972, been medically sterilized without their consent by government healthcare staff working through the BIA.[353]

The researcher found that historical trauma is multi-generational and the governmental actions of the past have and continue to contribute to the fear and distrust of agencies. This fear and distrust have and continues to result in negative consequences, such as higher morbidity and mortality rates (as seen during Hurricane Katrina), as well as civil unrest and community divisiveness.[354] Socioeconomic barriers, such as language, culture, and historical trauma are significant. He learned that the fear and distrust of

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[352] New Jersey Preparedness Training Consortium, *Cultural Impact Overview.*

[353] *Encyclopedia*, s.v. "Forced Sterilization of Native Americans," accessed November 9, 2016, http://www.encyclopedia.com/social-sciences/encyclopedias-almanacs-transcripts-and-maps/forced-sterilization-native-americans.

[354] Krase, "History of Forced Sterilization and Current U.S. Abuses."

government stem from these and varied but commonly combined barriers. It is imperative that practitioners understand the significance and magnitude that socioeconomic barriers and fear and distrust present to address and work to bridge the gaps that exist in their communities. Doing so may, someday, help in the repair of the psychological damage and impacts that stem from government-based traumatic events upon sub-populations. Furthermore, he learned that dedicating efforts to do so will increase the probability that more of this country's populations will survive bioterrorism attacks or other emerging health threats impacting U.S. communities in the homeland.

The SARS and Canada case study discussed in Chapter V looked at ways public health and healthcare practitioners could effectively and efficiently protect U.S. populations in an outbreak particularly when isolation and quarantining measures are necessary. The researcher learned that the Canadian healthcare workforce (and their government agencies in general) has been able to establish a stronger bond and sense of trust with their sub-populations, evidenced during the SARS outbreak in 2003. Asian Canadians willingly submitted to isolation and quarantining recommendations initiated by Canadian health workers in an effort to contain the spread of the highly infectious disease impacting their communities. The recommendations contained in Chapter V provided a path—a model—from which the U.S. public health and healthcare workforce should use to help ensure "voluntary compliance" of isolation and quarantine practices to help thwart the greater impacts as a result of a highly-pathogenic infectious disease scenario.

B. RECOMMENDATIONS

This thesis has outlined various socioeconomic barriers that will impede a response to bioterrorism and emerging health threats. The researcher has made the argument that socioeconomic barriers will have a significant impact in an event requiring emergency medication dispensing to 100 percent of a population in 48 hours. Before researching the event, he had no idea that the gap to be bridged would be so expansive and far-reaching. As mentioned earlier in this thesis, no changes will happen overnight, but with dedicated policy and strategy level efforts—what seem like daunting, impossible

tasks—can be achieved and the socioeconomic gap can be bridged. The following recommendations aim to assist practitioners with these efforts.

1. Community Outreach

To help mitigate against differential rates of morbidity and mortality in future health emergencies, it is critical that the entire U.S. public, including specific subgroups, have access to credible, accessible, and meaningful information that enables them to make appropriate use of potentially lifesaving emergency MCMs.[355] Although local public health agencies are well-positioned to understand the populations they serve, more deliberate approaches and emphasis must be placed to develop or strengthen relationships with faith-based leaders and other trusted intermediaries to reach specific communities, and to elicit greater understanding as to the health knowledge needs of diverse constituent groups.[356] Furthermore, local, state, and federal health practitioners need to establish or strengthen ties with national non-governmental organizations that represent the health interests of minority populations. These community-based relationships are beneficial and could lead to partners serving as conduits for targeted health messages that government agencies may need to disseminate if bioterrorism incidents or other emerging health threats were to occur.[357]

2. Building Trust through Community Resilience

Building community resilience to disasters is essential and is commonly described as "the ability to mitigate and rebound quickly."[358] Community resilience has become more popular among public health emergency preparedness practitioners and is now a "central focus and a required activity for all public health departments."[359] Viewing preparedness through a community resilience lens provides a foundation to work from for

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[355] Krase, "History of Forced Sterilization and Current U.S. Abuses."

[356] Ibid.

[357] Ibid.

[358] Alonzo Plough et al., "Building Community Disaster Resilience: Perspectives from a Large Urban County Department of Public Health," *American Journal of Public Health* 103, no. 7 (2013): 1190–97, doi: 10.2105/AJPH.2013.301268.

[359] Ibid.

improving community engagement and outreach efforts that will strengthen community relationships and improve both communication strategies and trust with entire populations across the homeland.[360]

The newly-developed CDC PHEP guidance incorporates the perspective that when disasters occur, social, cultural, and historical context of preexisting health disparities and socioeconomic barriers must be factored into response, as well as in some populations, the underlying realities of the mistrust of government.[361]

3. Using Appropriate "Whole Community" Risk Communications to Bridge the Gap

Effective risk communications serve as the basis emergency response missions to varied health emergencies.[362] The researcher has learned that emergency messaging needs to be developed in a "culturally appropriate manner" to ensure "whole community" populations adhere to emergency messaging and safety recommendations put forth by health and healthcare practitioners as a result of an emerging health threat.[363]

Leveraging a "whole community" approach to risk communications is beneficial and should be considered an essential approach to improve existing plans and procedures aimed at communication to entire populations as a result of a bioterrorism incident or other emergent health threat impacting communities. Whole community refers to a population's collective understanding of their specific vulnerabilities and needs in their

360 Plough et al., "Building Community Disaster Resilience: Perspectives from a Large Urban County Department of Public Health," 1190–97.

361 Ibid.

362 Ibid.

363 Randy Rowel et al., *A Guide to Enhance Risk Communication among Low-Income Populations* (Baltimore, MD: Morgan State University School Community Health and Policy, Department of Behavior Health Sciences, 2009), http://serve.mt.gov/wp-content/uploads/2010/10/A-Guide-to-Enhance-Risk-Communication-Among-Low-Income-Populations.pdf.

community.[364] A whole community approach to emergencies decides the most appropriate methods to "organize and strengthen their assets, capacities, and interests."[365]

Public health and healthcare practitioners must evaluate methods of "risk communication" and integrate those methods into the "whole community" approach.[366] Taking this approach to emergency preparedness goals will strengthen partnerships, promote trust, and build relationships with varied community groups.[367]

Establishing relationships with "grassroots stakeholders" are critical when strengthening and improving emergency outreach efforts to compromised populations in communities.[368] This approach will assist public health practitioners and their partners to "establish ongoing communication channels that ensure the continuous flow of information" to whole community populations.[369] A primary benefit to incorporating this approach is that the time saved to distribute emergency messages throughout communities. Furthermore, practitioners should ensure that health literacy levels have been accounted for as part of their grassroots efforts, which will help ensure protection and care of all community populations is provided in emergencies.[370]

Establishing a stronger, more-effective risk communication system across the "whole community" will help connect people to the locations and medical services they need as a result of a bioterrorism or other emerging health threat impacting populations in the homeland.[371]

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[364] Federal Emergency Management Agency, *A Whole Community Approach to Emergency Management: Principles, Themes, and Pathways for Action* (FDOC 104-008-1) (Washington, DC: Department of Homeland Security, 2011), https://www.fema.gov/media-library-data/20130726-1813-25045-0649/whole_community_dec2011__2_.pdf.

[365] Ibid.

[366] Ibid.

[367] Ibid.

[368] Ibid.

[369] Ibid.

[370] Ibid.

[371] Ibid.

C. "BRIDGING THE GAP"—FUTURE RESEARCH OPPORTUNITIES

While this thesis and research focus has centered on certain socioeconomic barriers and challenges, additional research, exploration, and analyses to build upon these findings will continue efforts to bridge the gaps that exist between populations. As discussed throughout this thesis, these dedicated and purposeful efforts by practitioners across the homeland security enterprise (HSE) will help protect more lives in times of health or health-related emergencies. Although the researcher has addressed some of the socioeconomic barriers that exist to impede response to bioterrorism or emerging health threats, he has certainly not addressed all of them. It would behoove the HSE to further investigate and predict impacts and variables associated to other aspects of the SDOH, SES or fear management. These barriers and challenges are critically important, too, as they relate to response missions. The three particular areas provide opportunities for future research by homeland security or health practitioners. Each is described with emphasis placed on their relevance to the response aspects required in health emergencies.

1. Socioeconomic Status

SES serves as a predictor of outcomes following natural disasters or health emergencies. A study was conducted following Hurricane Hugo (a storm impacting South Carolina in 1989 that claimed the lives of 22 people and triggered evacuations of more than 250,000.)[372] This study was aimed at response problems and challenges stemming from the event.

Evidence supports that the majority of those impacted by the event had special needs stemming from "extreme poverty, high illiteracy rates, physical isolation in rural communities, fear and distrust of government officials" including the overall lack of information after the storm.[373] The investigation found that very little outreach was done,

[372] "Medical Examiner/Coroner Reports of Deaths Associated with Hurricane Hugo—South Carolina," accessed December 10, 2016, http://www.cdc.gov/mmwr/preview/mmwrhtml/00001495.htm.

[373] Alice Fothergill and Lori A. Peek, *Poverty and Disasters in the United States: A Review of Recent Sociological Findings* (Fort Collins, CO: Center for Disaster and Risk Analysis, 2004), http://www.cdra.colostate.edu/data/sites/1/cdra-research/fothergill-peek2004poverty.pdf.

pre-storm, with populations impacted from poor areas and emergency programs were "not reaching these people."[374]

Additional SES (and the correlation between and consequences following health emergences) should be researched to identify and implement additional strategies and policies to bridge the socioeconomic gap that continues to widen across this nation's populations.

2. Social Determinants of Health

Although referenced in this thesis, the connections between SDoH and health emergencies need to be further researched to assist in efforts to bridge the gaps that impede response to emerging public health threats.

SDoH can best be described as the "causes behind the causes."[375] SDoH are the "upstream social and economic factors that largely but insidiously dictate the health—*and disease*—of individuals and populations."[376] SDoH takes into account the living conditions and environmental specifics in people's lives that relate to health outcomes including the consequences that can be anticipated in disasters and health emergencies.[377] SDoH includes access to schools, transportation, safe housing, and access to healthcare and freedom from discrimination.[378] According to the CDC, integrating SDoH into response missions will not only "improve individual and population health but also advance health equity."[379] Early on, health equity was one of the barriers or "pillars" the researcher was investigating to perhaps include in this thesis. The project, however, became too large to expand on and incorporate into this thesis. That said, he would

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[374] Fothergill and Peek, *Poverty and Disasters in the United States: A Review of Recent Sociological Findings*.

[375] Alessandro R. Demaio, "What Are 'Social Determinants of Health'?" *The Conversation*, November 20, 2012, http://theconversation.com/what-are-social-determinants-of-health-10864.

[376] Ibid.

[377] "Social Determinants of Health: Know What Affects Health."

[378] Ibid.

[379] Ibid.

recommend future researchers consider this SDoH component and its association and impact in health emergencies across varied populations.

3. Fear Management

Throughout this thesis, evidence was provided that associate fear and distrust of government as both relevant and significant barriers impeding response to emergent public health events. Managing fear is critical in helping to ensure entire populations receive the emergency medical prophylaxis, sheltering, or other care needed as a result of a bioterrorism incident or emerging health threat. Additional research associated and dedicated to fear and distrust and emerging health threats would also assist in bridging the socioeconomic barriers and bioterrorism or other health threat.

Health practitioners are tasked with being stewards of fear management. While public health traditionally focuses on population level health, individual fears and questions are most important to those directly impacted by an incident. Such concerns must be acknowledged with empathy to foster trust among affected individuals, assure them that their health and safety is a priority, and encourage compliance with official guidance.[380] Empathizing with minority and other marginalized groups inherently involves understanding historical conflicts (discussed earlier in this thesis) between these groups and the public health and healthcare community. It is essential that health professionals are able to recognize public anxiety around the possibility of human experimentation and address concerns about clinical trials and epidemiological studies in the context of historical incidents.[381] Fear stemming from the Tuskegee Experiment has impacted more recent public health emergencies, such as H1N1, as distrust and fear carry forward and the actions as government officials should be considered to have multi-generational consequences. Among poor, African American subpopulations in Los Angeles County, CA, for example, long-standing distrust in the U.S. government

[380] Monica Schoch-Spana et al., *How to Steward Medical Countermeasures and Public Trust in an Emergency, A Communication Casebook for FDA and its Public Health Partners* (Baltimore, MD: Johns Hopkins, Bloomberg School of Public Health, Center for Health Security, 2016), http://www.upmchealthsecurity.org/our-work/events/2016%20FDA%20MCM/FDA_Casebook.pdf.

[381] Ibid.

stemming from the Tuskegee Experiment led local faith-based leaders to urge their congregants not to accept the H1N1 vaccine, local disc jockeys from stations with predominantly African American audiences to advise their listeners not to be vaccinated, and community members to forward chain emails and like Facebook posts with anti-vaccination messages.[382] Subsequently, vaccination rates for African Americans in Los Angeles County were lower than rates for all other racial and ethnic groups in that area.

D. CONCLUSION

Although the researchers trust the information provided in this thesis will have an immediate influence and impact—and he can guarantee it will in Wisconsin—he hopes it will spark additional research thesis projects associated with language, culture, historical trauma and other socioeconomic barriers and situations that exist across communities. As evidenced, it can be assumed these barriers will significantly impede response efforts to emergency MCM events. Thus, practitioners need to take deliberate actions to "bridge the gap" in their jurisdictions.

Furthering this work is important to respond better and assist entire populations impacted by future bioterrorism or emerging public health threats. Efforts and emphasis placed on activities to "bridge the gap" will further reduce fear, distrust, and misperceptions of preferential treatment among populations. As a result, lower mobility and morality rates could be expected and the risk of rioting, civil unrest and community divisiveness lessened across the homeland.

[382] Schoch-Spana et al., *How to Steward Medical Countermeasures and Public Trust in an Emergency, A Communication Casebook for FDA and its Public Health Partners.*

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